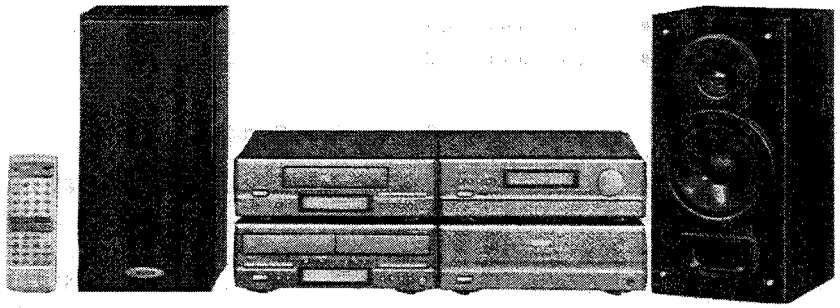
DENON

Hi-Fi Personal Component System

SERVICE MANUAL

PERSONAL COMPONENT SYSTEM

UNIT No. UTP-250 (MW, LW, FM Tuner/Pre Amplifier)



COMPACT disc DIGITAL AUDIO

- **The D-250 Personal Component System consists of the following:**

Power Amplifier	UPO-250
MW, LW, FM Tuner / Pre Amplifier Section	UTP-250
Remote Control Unit	RC-154
Cassette Deck Section	UDRW-250
CD player Section	UCD-250

MAIN FEATURES

- **AM/FM 30-station random preset tuner**
  Random presetting permits easy operation and will be convenient for the increased number of FM stations in the future.
- **Independent power amplifier designed for quality sound**
  High quality 50 W per channel power amplifier with large speaker terminals.
- **New SDB control**
  The Super Dynamic Bass control circuit delivers clear bass sound.
- **Super linear converter and high performance digital filter**
  Denon's unique systems for preventing loss of CD sound quality permit excellent sound field reproduction.
- **Editing circuit**
  Automatic selection of CD tracks for minimum blank space on the tape when recording.
- **Dolby B, C and HX PRO circuits**
  For high quality sound in playback and recording.
- **CD SRS circuit**
  CDs can be recorded at the touch of a button.
- **Easy-to-use remote control unit**
- **Auto on/off function**
  This function switches on the power with just a press of the CD or cassette deck play button. The power is switched off about 10 minutes after playback has finished.

BEFORE USING

- **Moving the system**
  To prevent short-circuiting or damage of connection cords, be sure to unplug the power cord and disconnect all connection cords before moving the system.
  In addition, always remove CDs before moving the system. If not, the CD may be scratched.
- **Before turning the power on**
  Check again that all connections are proper and that the connection cords are not damaged. Always set the power switch to the STANDBY position before disconnecting connection cords.
- Humming may be produced if the system is set near a TV set or other audio component or its connection cords. If this happens, try changing the position of the equipment and connection cords.
- Do not move the system abruptly from a cold place to a warm place, as this may cause dew (water droplets) to form in the set, preventing proper operation. If this happens, wait one hour before using the system.
- **Be sure to keep this manual**
  The illustrations used in this manual may differ from the actual system.

Check that the following parts are included in the package aside from the main unit:

① Operating Instructions 1
② FM Antenna 1
③ AM Loop Antenna 1
④ Remote Controller 1
⑤ R6P/AA batteries 2
⑥ System Connectors 1 & 2 2
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NIPPON COLUMBIA CO., LTD.

GENERAL SECTION

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Tuner Pre-Amp Unit	UTP-250	1S
Power Amplifier Unit	UPO-250	1S
CD Player Unit	UCD-250	1S
Cassette Deck Unit	UDRW-250	1S
Top Cushion	503 1002 001	1
Top Spacer	502 0763 018	1
Top Spacer	502 0763 034	1
Space Cushion	502 9124 001	2
(Master) Carton	501 1626 012	1
┌─Envelope Sub Assy		1S
├┌Envelope	505 8006 019	1
├┌Notice Sheet	515 0601 008	1
├┌Inst. Manual	511 2421 006	1
├┌Loop Antenna	231 0922 009	1
├┌Remocon (RC-154)	499 0228 008	1
└┌FM Ant. Ass'y	395 0019 025	1
┌─Envelope Sub Ass'y		1S
├┌Envelope	505 9119 002	1
└┌Output Cord Ass'y	009 9022 015	2

SPECIFICATIONS

- **Tuner-preamplifier (UTP-250)**

Reception Frequency Range:	FM: 87.50 MHz to 108.00 MHz AM: 522 kHz to 1611 kHz (MW), 153 kHz to 279 kHz (LW)
Receiving Sensitivity:	FM: 1.5 µV, 75 ohms (SN ratio 30 dB) AM: 20 µV (SN ratio 20 dB, MW), 35 µV (SN ratio 20 dB, LW)
FM Stereo Separation:	40 dB (1 kHz)
Bass Adjustment:	100 Hz ±8 dB
Treble Adjustment:	10 kHz ±8 dB
Super Dynamic Bass:	80 Hz +8 dB
Jacks:	PREOUT: Output jacks PHONO: Input jacks DAT: Input jacks, recording output jacks Processor: Processor input/output jacks
Dimensions (max.):	270 (W) × 86 (H) × 330 (D) mm (10-5/8" × 3-25/64" × 13")
Weight:	3.2 kg (7 lbs 10 oz)
Power Supply:	AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption:	18 W

- **Amplifier (UPO-250)**

Rated Output Power:	50 W + 50 W (20 Hz to 20 kHz, 8 ohm)
Jacks:	6.3 mm headphone jack
Dimensions (max.):	270 (W) × 96 (H) × 330 (D) mm (10-5/8" × 3-25/32" × 13)
Weight:	4.1 kg (9 lbs 1 oz)
Power Supply:	AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption:	140 W

- **CD Player (UCD-250)**

Wow and Flutter:	Below measurable limits (±0.001% W. Peak)
Sampling Frequency:	44.1 kHz
Light Source:	Semiconductor
Dimensions (max.):	270 (W) × 86 (H) × 313 (D) mm (10-5/8" × 3-25/64" × 12-21/64")
Weight:	3.1 kg (6 lbs 13 oz)
Power Supply:	AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption:	15 W

- **Cassette Deck (UDRW-250)**

Type:	Horizontal 4-track, 2-channel auto reverse stereo cassette deck
Heads:	1 hard permalloy recording/playback head, 1 hard permalloy playback head, and 1 double-gap ferrite erase head
Tape Speed:	4.75 cm/s
Noise Reduction Circuits:	Dolby B and C NR
Usable Tapes:	Normal, chrome, and metal tapes
Dimensions (max.):	270 (W) × 96 (H) × 318 (D) mm (10-5/8" × 3-25/32" × 12-33/64")
Weight:	4.4 kg (9 lbs 11 oz)
Power Supply:	AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption:	18 W

- **Remote Control Unit (RC-154)**

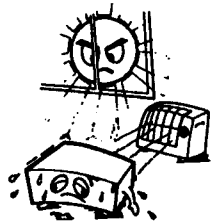
Type:	Infrared pulse
Number of Buttons:	41 (including 1 slide switch)
Dimensions (max.):	60 (W) × 177 (H) × 18 (D) mm (20-23/64" × 6-31/32" × 45/64")
Weight:	130 g (Approx. 6.4 oz) (including batteries)

* Maximum dimensions include controls, jacks, and covers. (W) = width, (H) = height, (D) = depth

- For improvement purposes, specifications and functions are subject to change without advanced notice.

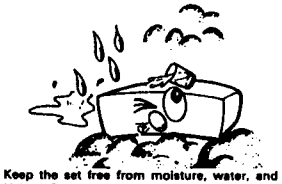
ADVARSEL:	**USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.**
VARO!	**AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.**
VARNING -	**OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.**

NOTE ON USE/HINWEISE ZUM GEBRAUCH/OBSERVATIONS RELATIVES A L'UTILISATION/NOTE SULL'USO

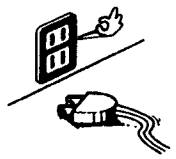


- Avoid high temperatures
  Allow for sufficient heat dispersion when installed on a rack.
- Vermeiden Sie hohe Temperaturen
  Beachten Sie, daß eine zureichende Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird.
- Eviter des températures élevées
  Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère.
- Evitate di esporre l'unità a temperature alte.
  Assicuratevi che ci sia un'adeguata dispersione del calore quando installate l'unità in un mobile per componenti audio.

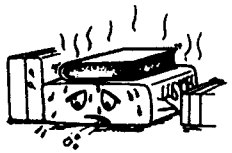
- Handle the power cord carefully.
  Hold the plug when unplugging the cord.
- Gehen Sie vorsichtig mit dem Netzkabel um.
  Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.
- Manipuler le cordon d'alimentation avec précaution.
  Tenir la prise lors du débranchement du cordon.
- Manneggiate il filo di alimentazione con cura.
  Agite per la spina quando scollegate il cavo dalla presa.



- Keep the set free from moisture, water, and dust.
- Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern.
- Protéger l'appareil contre l'humidité, l'eau et la poussière.
- Tenete l'unità lontana dall'umidità, dall'acqua e dalla polvere.

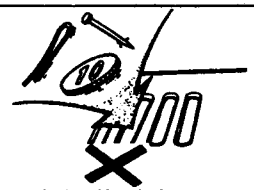


- Unplug the power cord when not using the set for long periods of time.
- Wenn das Gerät eine längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Netzstecker.
- Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes.
- Disinnestate il filo di alimentazione quando avete l'intenzione di non usare il filo di alimentazione per un lungo periodo di tempo.



*(For sets with ventilation holes)

- Do not obstruct the ventilation holes.
- Die Belüftungsöffnungen dürfen nicht verdeckt werden.
- Ne pas obstruer les trous d'aération.
- Non coprite i fori di ventilazione.



- Do not let foreign objects in the set.
- Keine fremden Gegenstände in das Gerät kommen lassen.
- Ne pas laisser des objets étrangers dans l'appareil.
- E' importante che nessun oggetto è inserito all'interno dell'unità.

- Do not let insecticides, benzene, and thinner come in contact with the set.
- Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen.
- Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil.
- Assicuratevvi che l'unità non venga in contatto con insetticidi, benzolo o solventi.

- Never disassemble or modify the set in any way.
- Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern.
- Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.
- Non smontate mai, nè modificate l'unità in nessun modo.

SAFETY IMPORTANT

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

(UTP-250 only)

IMPORTANT
(BRITISH MODEL ONLY)

The wires in this mains lead are coloured in accordance with the following code:

Blue:	Neutral
Brown:	Live

The colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSAETTELSE FOR STRÅLING.

VAROITUS! LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

VARNING- OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERATS, KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

"CLASS 1
LASER PRODUCT"

Irregularities
- If the system should smoke or produce strange smells, immediately set the power switch to the STANDBY position, unplug the power cord, and contact your store of purchase.

Unregelmäßigkeiten
- Sollte das Gerät Rauch produzieren oder eigenartig riechen, stellen Sie den Netzschalter sofort auf die Position STANDBY (Bereitschaft), ziehen Sie den Netzstecker heraus und kontaktieren Sie Ihren Händler.

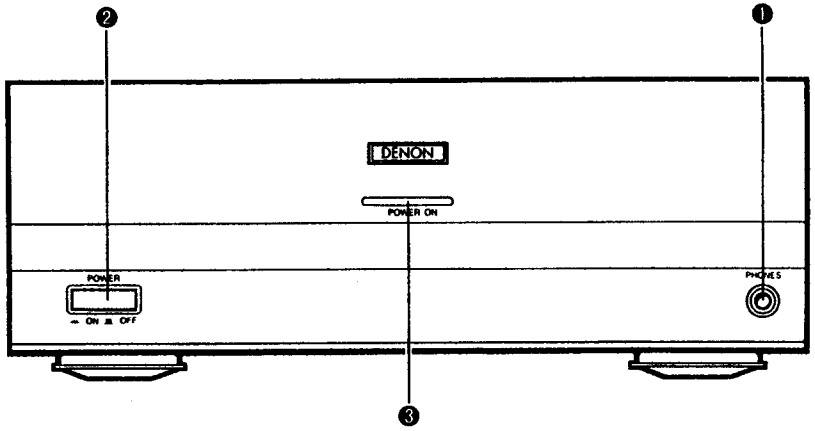
Anomalies
- Si de la fumée sort de la chaine ou des odeurs bizarres, placer l'interrupteur d'alimentation immédiatement sur la position de veille (STANDBY), débrancher le cordon d'alimentation et contacter le distributeur.

Irregolarità
- Qualora il sistema dovesse produrre del fumo o degli odori strani, collocate immediatamente l'interruttore di accensione nella posizione STANDBY, disinnestate il filo di alimentazione e rivolgetevi al negozio dell'acquisto.

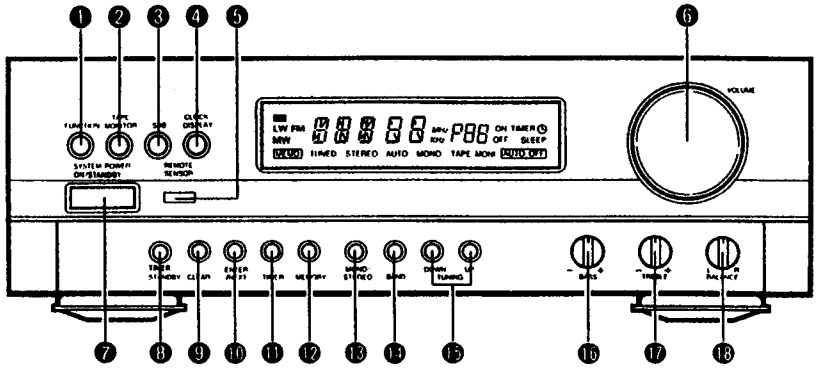
"SERIAL NO. _____
PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"

FRONT PANEL/FRONTPLATTE/PANNEAU AVANT/PANNELLO ANTERIORE

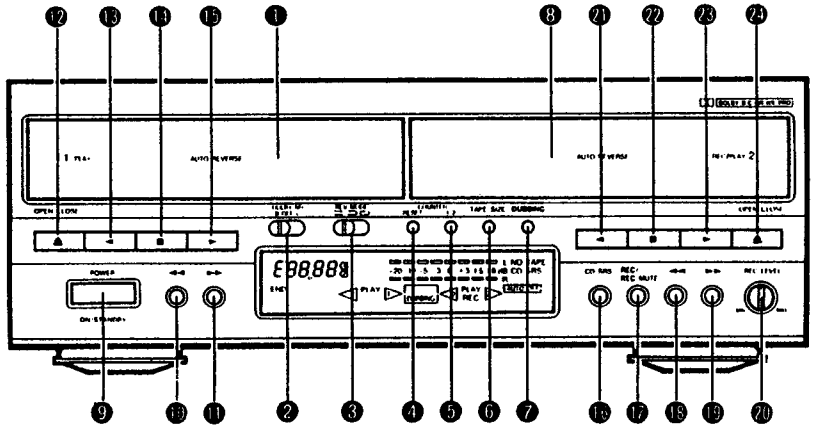
POWER AMPLIFIER
LEISTUNGSVERSTÄRKER
AMPLIFICATEUR DE PUISSANCE
AMPLIFICATORE DI POTENZA



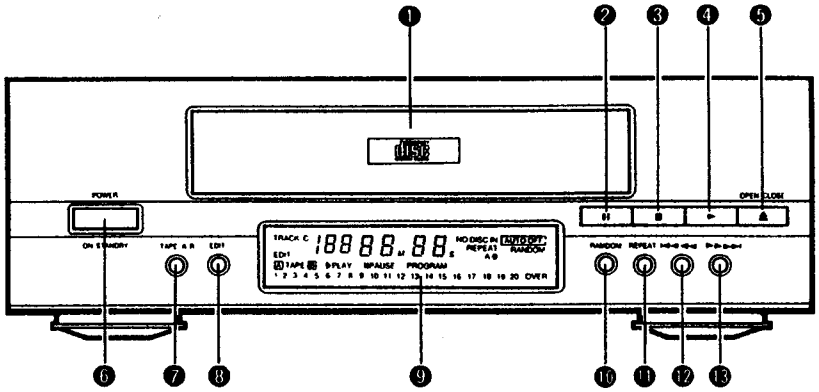
TUNER-PREAMPLIFIER
TUNER-VORVERSTÄRKER
TUNER-PREAMPLIFICATEUR
SINTONIZZATORE-PREAMPLIFICATORE



CASSETTE DECK
CASSETTENDECK
PLATINE CASSETTE
PIASTRA A CASSETTE



CD PLAYER
CD-SPIELER
LECTEUR CD
DISPLAY DELLA PIASTRA A CASSETTE



- As an aid to better understanding the operation method, the illustrations used in this manual may differ from the actual system.
- Als Hilfestellung zum besseren Verständnis der Betriebsmethode, erlauben wir uns den Hinweis, daß sich die Abbildungen in dieser Bedienungsanleitung leicht von dem aktuellen System unterscheiden.
- Pour faciliter la compréhension de la méthode de fonctionnement, les illustrations utilisées dans ce manuel peuvent être différentes de celles de la chaîne réelle.
- Per rendere la spiegazione del metodo operativo più facile, le illustrazioni usate in questo libretto delle istruzioni possono differire dal sistema stesso.

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⑧ Pin Plug Cords 4

[1] MAIN FEATURES

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  Random presetting permits easy operation and will be convenient for the increased number of FM stations in the future.
- **Independent power amplifier designed for quality sound**
  High quality 50 W per channel power amplifier with large speaker terminals.
- **New SDB control**
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- **Super linear converter and high performance digital filter**
  Denon's unique systems for preventing loss of CD sound quality permit excellent sound field reproduction.
- **Editing circuit**
  Automatic selection of CD tracks for minimum blank space on the tape when recording.
- **Dolby B, C and HX PRO circuits**
  For high quality sound in playback and recording.
- **CD SRS circuit**
  CDs can be recorded at the touch of a button.
- **Easy-to-use remote control unit**
- **Auto on/off function**
  This function switches on the power with just a press of the CD or cassette deck play button. The power is switched off about 10 minutes after playback has finished.

[2] BEFORE USING

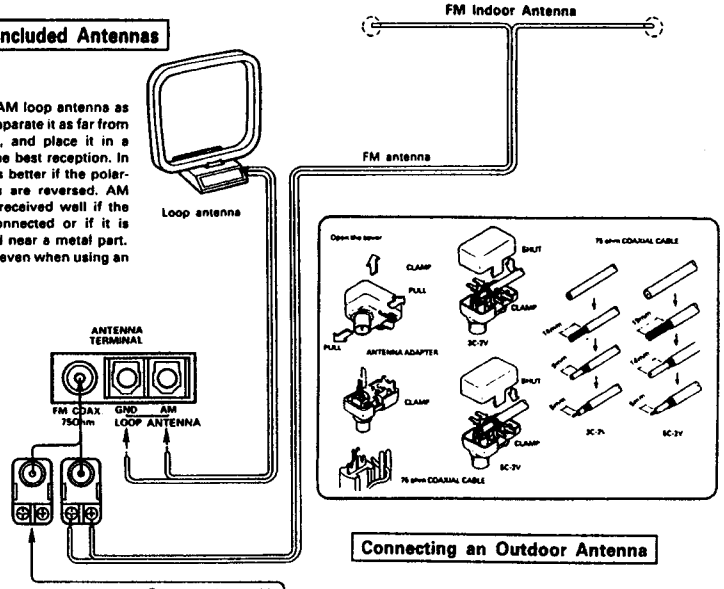
Note the following points before using the D-250.

- **Moving the system**
  To prevent short-circuiting or damage of the connection cords, be sure to unplug the power cord and disconnect all connection cords before moving the system.
  In addition, always remove CDs before moving the system. Failing to do so may result in scratched CDs.
- **Before switching on the power**
  Check again that all connections are proper and that the connection cords are not damaged. Be sure to disconnect the power plug before disconnecting or connecting the connection cords.
- Hum may be produced if a TV set or another audio component is set near this system or their connection cords are nearby. If this happens, try changing the position of the equipment and connection cords.
- Do not move the system abruptly from a cold place to a warm place, since t his may cause water droplets (condensation) to form in the equipment, preventing proper operation. If this happens, wait one hour before using the system.

[3] ANTENNA CONNECTIONS

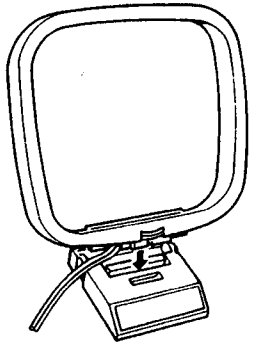
Connecting the Included Antennas

AM Loop Antenna
Assemble the included AM loop antenna as shown in the diagram, separate it as far from the system as possible, and place it in a position that provides the best reception. In some cases, reception is better if the polarities of the connections are reversed. AM broadcasts will not be received well if the loop antenna is not connected or if it is connected but is located near a metal part. Attach the loop antenna even when using an outdoor AM antenna.



Center conductor side

Assembling the Loop Antenna

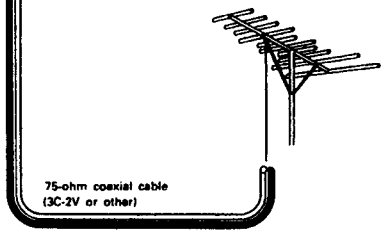


- Remove the tie fastening the loop antenna's lead and connect the lead to the antenna terminals.

- Separate the FM and AM antenna wires from the system connector wires.

Connecting an Outdoor Antenna

Use an outdoor antenna if reception cannot be heard clearly with the included antenna. Change the location, height, and direction of the antenna to find the position of best reception, then fix the antenna in that position.

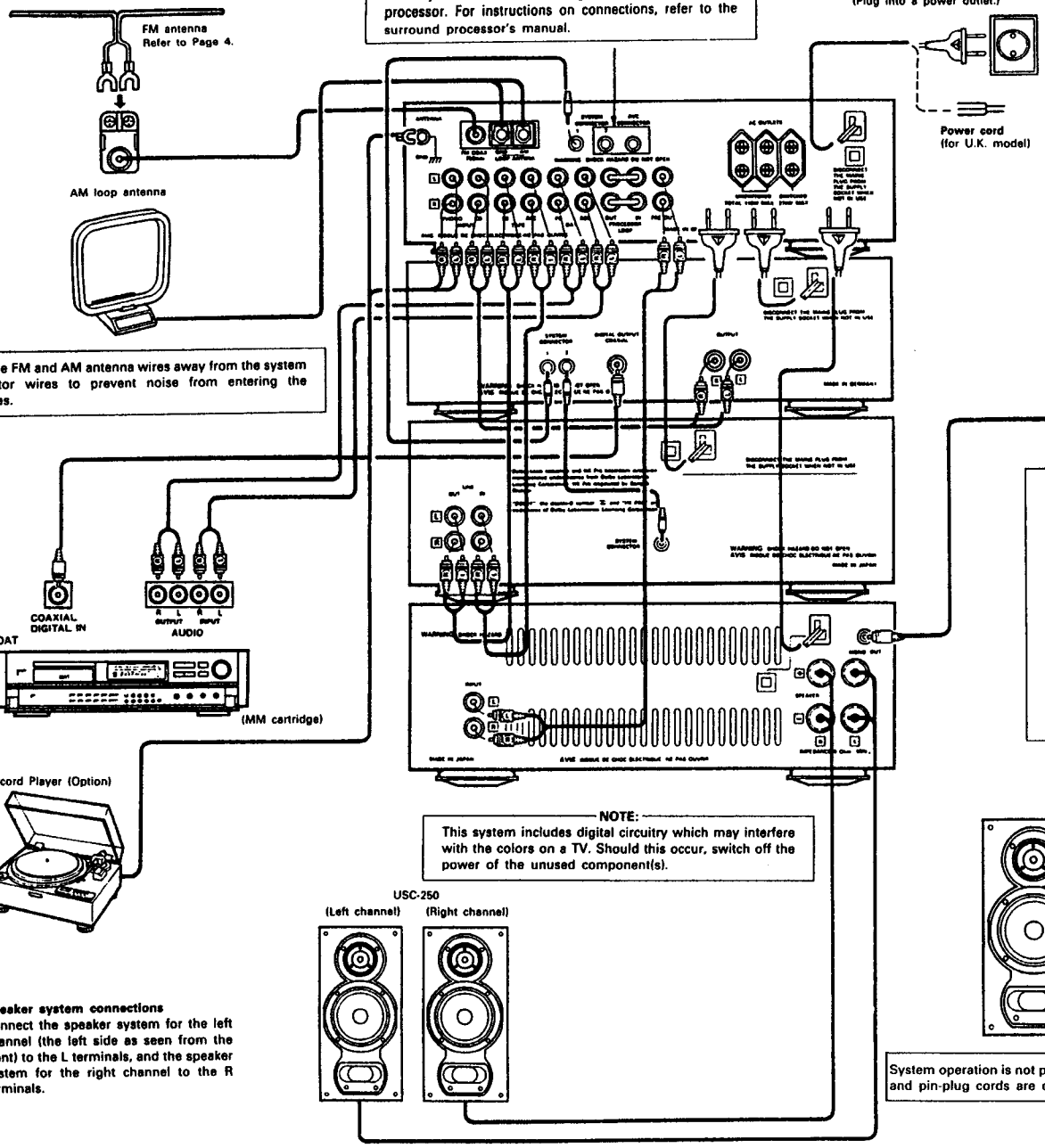


- Connect the outdoor antenna using 75-ohm coaxial cable. This will help shield the antenna from external noise.

• Places for Installing Outdoor Antennas

- Install the outdoor antenna facing a broadcast station's transmission antenna.
  When surrounded by buildings or hills, place the antenna in the location which provides best reception and try changing the direction of the antenna to obtain optimum reception.
- Do not install the antenna under power lines.
  It is extremely dangerous for the antenna to come into contact with a power line.
- Install away from roads and train tracks to prevent noise from cars and trains.
- Do not install the antenna too high, as it may be hit by lightning.

4 CONNECTIONS


FM antenna
Refer to Page 4.
AM loop antenna
These jacks are for connecting the exclusive surround processor. For instructions on connections, refer to the surround processor's manual.
Power plug
AC 230 V 50 Hz,
AC 240 V 50 Hz (for U.K. model)
(Plug into a power outlet.)
Power cord
(for U.K. model)
Keep the FM and AM antenna wires away from the system connector wires to prevent noise from entering the antennas.
COAXIAL
DIGITAL IN
AUDIO
DAT
(MM cartridge)
Record Player (Option)
USC-250
(Left channel)
(Right channel)

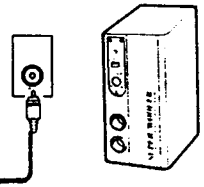
AC OUTLET

Always connect the amplifier's (UPO-250) power cord to this AC outlet.

- SWITCHED (total capacity of 370 W)
  The power of this outlet is switched on and off with the tuner's power switch.
  Plug the power amplifier's power cord into this outlet.
- UNSWITCHED (total capacity – 110W)
  The power is supplied to these outlets regardless of whether or not the tuner's power switch is turned on or off.
  Plug the power cords of the CD player and cassette deck into these outlets.

MONO OUT jack

Jack for connecting a subwoofer (super woofer) with built-in amplifier.



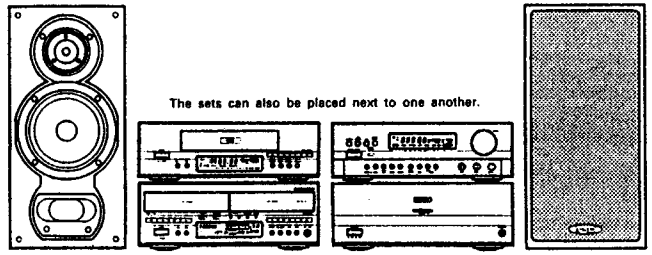
- Do not plug the power cord into the outlet until all connections have been completed. Connect properly as illustrated in the diagram.
- Check the left and right channels, then properly connect the left speaker's terminals to the amplifier's L terminals and the right speaker's terminals to the amplifier's R terminals.
- Insert the plugs securely. Incomplete connections can cause noise.
- When the power cord has been disconnected from the power outlet, wait about 5 seconds before plugging it back in.
- **Use the AC OUTLET to plug in the amplifier CD and Cassette deck. Never use it for other appliances, such as hair driers, etc.**
- Note that grouping connection cords (pin-plug cords) together with power cords or setting them near power transformers can cause hum or other noise.
- Note that if the input jacks selected with the FUNCTION button are open (if a component is not connected), there might be leakage of the reproduced sound of a component connected to another set of input jacks.

NOTE:

This system includes digital circuitry which may interfere with the colors on a TV. Should this occur, switch off the power of the unused component(s).

Speaker system connections

Connect the speaker system for the left channel (the left side as seen from the front) to the L terminals, and the speaker system for the right channel to the R terminals.



NOTE:

System operation is not possible and the power cannot be turned on and off unless all system connector cords and pin-plug cords are connected.

5 PART NAMES AND FUNCTIONS

POWER AMPLIFIER

❶ **PHONES jack**
When using headphones, plug them in here.
The sound from the speakers is cut when headphones are plugged in.

❷ **POWER switch**
When pressed once, the power is switched on and the power indicator LED lights up. This switch is usually left on.

❸ **Power indicator LED**
This LED will flash for about 5 seconds until the speaker relay goes on, then it will light steadily. The LED will also flash when the protection circuit is activated. Should this occur, switch the power off, check the speaker connections, then switch the power on again.

TUNER-PREAMPLIFIER

❶ **FUNCTION button**
Use this to select the program source.
The selection changes in the order of TUNER, TAPE, CD, PHONO, and DAT.

❷ **TAPE MONITOR button**
Use this to listen to the sound of the tape. When used with a 3-head tape deck, the sound can be monitored while recording.

❸ **SDB (Super Dynamic Bass) button**
Press this button for more powerful bass sound.

❹ **CLOCK/DISPLAY button**
This button switches the display to the reception frequency or the function display and time display.

❺ **Remote control sensor**
The remote control unit is pointed toward this sensor and operated.

❻ **VOLUME control**
This control adjusts the overall volume. Turn clockwise ( ) to increase the volume, counterclockwise ( ) to decrease it.

❼ **SYSTEM POWER button**
(This switch can switch on the power for the entire system.)
Press to switch the power on, press again to put the system into standby.

❽ **TIMER STANDBY button**
Press this button to cause the timer to operate at the set time. When the timer has been set, pressing this button will light up the display's timer standby indicator ( ), and pressing it again will switch off the standby indicator. The timer will not function when the standby indicator is off.

❾ **CLEAR button**
This button is used to change the current time setting or the contents of the set timer.

❿ **ENTER/NEXT button**
This is used when setting the timer, setting the current time, and when advancing to the next operation.

⓫ **TIMER button**
This is used to set the timer.

⓬ **MEMORY button**
This button is used when presetting FM, MW and LW stations.

⓭ **MONO/STEREO (FM stereo mute/mono) button**
This button will not function when receiving MW/LW broadcasts.
(For FM reception)
STEREO (mute): Use this mode to receive FM broadcasts in stereo.
("AUTO" appears on the display.) The muting circuit is activated to cut the hiss noise between stations.
MONO: In this mode, FM broadcasts are received in monaural, regardless of whether they are broadcast in monaural or stereo.
Set to the mono mode if there is much noise in the stereo mute mode (with "AUTO" displayed) or if the signals are weak.

⓮ **BAND (FM/MW/LW selection) button**
With each press, the band is switched in the order of FM, MW, LW, FM, and so on.

⓯ **TUNING UP and DOWN buttons**
Use these to tune in FM, MW or LW stations and when setting the clock and timer.

⓰ **BASS control**
Use this control to adjust the bass.

⓱ **TREBLE control**
Use this control to adjust the treble.

⓲ **BALANCE control**
Use this control to adjust the balance of the volume between the left and right channels. The volume is the same for the left and right channels when the control is at the center.

CASSETTE DECK

❶ **Cassette tray: Deck 1**
The cassette tray opens outward when the OPEN/CLOSE button is pressed. Insert the cassette tape with the side on which the tape is exposed facing away from you. To close the cassette tray, press the OPEN/CLOSE button again.

❷ **DOLBY NR selection switch**
Use this switch to select the Dolby NR mode: off, B type or C type. During playback, set this switch to the same mode in which the tape was recorded.

❸ **REV MODE switch**
Use this switch to set the reverse mode to one of the following modes: (single side mode), (two-side mode), or (continuous mode).
Refer to Page 13 for details.

❹ **COUNTER RESET button**
Press this button to reset the tape counter to 00.00.

❺ **COUNTER 1/2 selection button**
Use this button to change the counter display between deck 1 and deck 2.

❻ **TAPE SIZE setting button**
Set the time of the tape to the length of the tape being used.
Refer to Page 8 for details.

❼ **DUBBING button**
Simply pressing this button permits dubbing (copying) a tape from deck 1 to deck 2.

❽ **Cassette tray: Deck 2**
The cassette tray opens outward when the OPEN/CLOSE button is pressed. Insert the cassette tape with the side on which the tape is exposed facing away from you. To close the cassette tray, press the OPEN/CLOSE button again.

❾ **POWER ON/STANDBY switch**
This switch turn the power of the cassette deck on and off.

❿ **◀◀ (rewind) button: Deck 1**
Press this button to rewind the tape in deck 1. Also, if pressed during playback in the ▶ (forward) direction, the tape is rewound to the beginning of the currently playing selection. If pressed during playback in the ◀ (reverse) direction, the tape is forwarded to the beginning of the next selection (on the back side of the tape).

⓫ **▶▶ (fast-forward) button: Deck 1**
Press this button to fast forward the tape in deck 1. Also, if pressed during playback in the ▶ (forward) direction, the tape is fast forwarded to the beginning of the following selection. If pressed during playback in the ◀ (reverse) direction, the tape is rewound to the beginning of the currently playing selection (on the back side of the tape).

⓬ **⏏ OPEN/CLOSE button: Deck 1**
Press this button to open and close the cassette tray. The button also works in the standby condition.

⓭ **◀ (reverse play) button: Deck 1**
Press this button to begin playback in the reverse direction on deck 1.
When this button is pressed in the standby condition, the power is automatically switched on and the deck plays.

⓮ **■ (stop) button: Deck 1**
Press this button to stop the moving tape in deck 1.

⓯ **▶ (forward play) button: Deck 1**
Press this button to begin playback in the forward direction on deck 1.
When this button is pressed in the standby condition, the power is automatically switched on and the deck plays.

⓰ **CD SRS (CD synchronized recording button)**
Use this button for simple CD synchronized recording.
Refer to Page 15.

⓱ **REC/REC MUTE (recording/recording mute) button**
To record, press the REC/REC MUTE button and the ▶ play button only. If only the REC/REC MUTE button is pressed, the deck is set to the recording pause mode. If this button is pressed again, or pressed during recording, the recording mute mode is set for approximately 5 seconds, after which the deck is set to the recording pause mode.

Recording pause mode
When the play button of the CD player is pressed in the recording pause mode, the CD begins to be recorded.

⓲ **◀◀ (rewind) button: Deck 2**
Press this button to rewind the tape in deck 2. Also, if pressed during playback in the ▶ (forward) direction, the tape is rewound to the beginning of the currently playing selection. If pressed during playback in the ◀ (reverse) direction, the tape is forwarded to the beginning of the next selection (on the back side of the tape).

⓳ **▶▶ (fast-forward) button: Deck 2**
Press this button to fast forward the tape in deck 2. Also, if pressed during playback in the ▶ (forward) direction, the tape is fast forwarded to the beginning of the following selection. If pressed during playback in the ◀ (reverse) direction, the tape is rewound to the beginning of the currently playing selection (on the back side of the tape).

⓴ **REC LEVEL (recording level) control**
Use this control to set the recording level.

㉑ **◀ (reverse play) button: Deck 2**
Press this button to begin playback in the reverse direction on deck 2.
When this button is pressed in the standby condition, the power is automatically switched on and the deck plays.

㉒ **■ (stop) button: Deck 2**
Press this button to stop the moving tape in deck 2.

㉓ **▶ (forward play) button: Deck 2**
Press this button to begin playback in the forward direction on deck 2.
When this button is pressed in the standby condition, the power is automatically switched on and the deck plays.

㉔ **⏏ OPEN/CLOSE button: Deck 2**
Press this button to open and close the cassette tray. The button also works in the standby condition.

- Deck 1 is for playback only and deck 2 is for recording and playback.
- After the power cord is plugged into an outlet, a mechanical sound is produced from the cassette deck when the power switch is pressed on the first time only. This is the sound of the cassette mechanism being set to the proper operating position, and is not a problem with the deck.

CD PLAYER

❶ **Disc tray**
Compact discs are loaded to the disc tray.

❷ **II Pause button**
Press this button to stop CD play temporarily.
Press the play button to resume CD play.

❸ **■ Stop button**
Press this button to stop CD play.

❹ **▶ Play button**
Press this button to start playing the disc. If pressed when the disc tray is open, the disc tray closes and playback begins. Pressing this button in the standby mode automatically switches on the power and plays the disc.

❺ **⏏ OPEN/CLOSE button**
Press this button to open the disc tray. Press once to open the disc tray forward, then press again to close the disc tray. This button also operates in the standby mode.

❻ **POWER ON/STANDBY switch**
Press this to switch the CD player's power on and off.

❼ **TAPE A/B button**
Press this button during editing to switch the display between the display of program contents for tape side A and the display for tape side B.

❽ **EDIT button**
Press this button for edited recording (dividing the tracks to be recorded to fit onto sides A and B of a tape according to the length of the tape).

❾ **Display**
This displays the time and the settings of the various buttons.

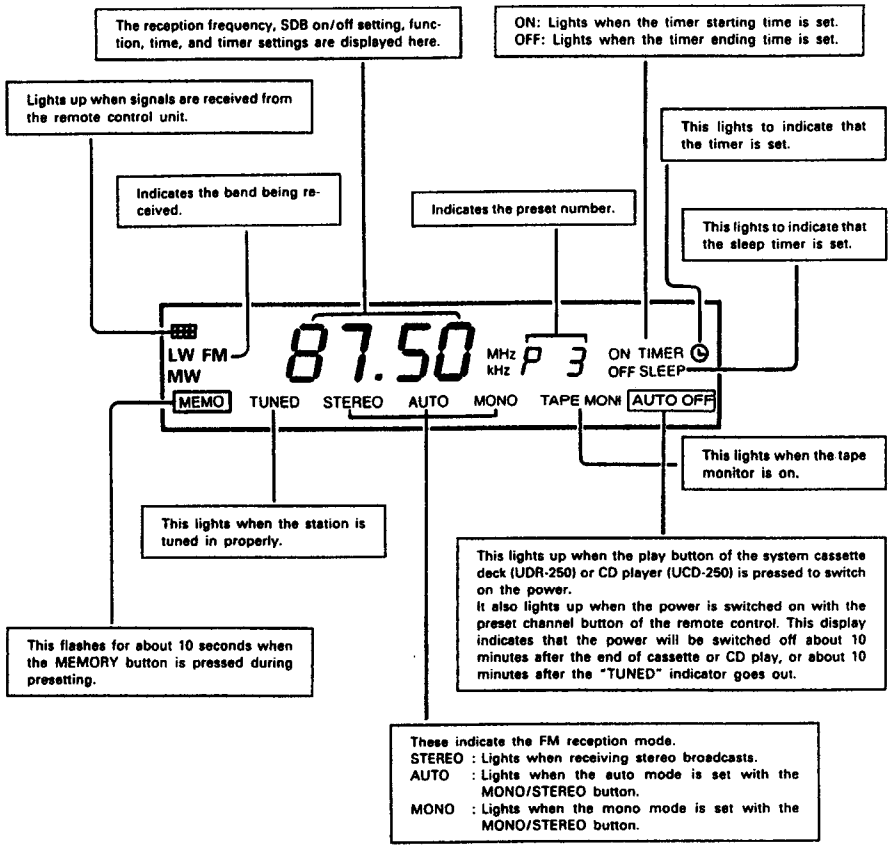
❿ **RANDOM button**
Press this button to play the disc tracks in random order.

⓫ **REPEAT button**
Press this button for repeat play.

⓬ **⏮ ◀◀ (automatic/manual search backward button)**
Press this button to move the pickup back to the beginning of the desired track.
Press in the play, stop, or pause mode to move back a number of tracks equal to the number of times the button is pressed.

⓭ **▶▶ ⏭ (automatic/manual search forward button)**
Press this button to move the pickup forward to the beginning of the desired track.
Press in the play, stop, or pause mode to move forward a number of tracks equal to the number of times the button is pressed.
* The automatic search function is set if button ⓬ or ⓭ is released within 0.5 seconds, and the manual search function is set if the button is held in for more than 0.5 seconds.
* Buttons ⓬ and ⓭ do not function in the pause mode.

TUNER-PREAMPLIFIER DISPLAY


The reception frequency, SDB on/off setting, function, time, and timer settings are displayed here.
ON: Lights when the timer starting time is set.
OFF: Lights when the timer ending time is set.
Lights up when signals are received from the remote control unit.
This lights to indicate that the timer is set.
Indicates the band being received.
Indicates the preset number.
This lights to indicate that the sleep timer is set.
LW FM
MW
87.50
MHz
kHz
P 3
ON TIMER
OFF SLEEP
MEMO
TUNED
STEREO
AUTO
MONO
TAPE MON
AUTO OFF
This lights when the tape monitor is on.
This lights when the station is tuned in properly.
This lights up when the play button of the system cassette deck (UDR-250) or CD player (UCD-250) is pressed to switch on the power.
It also lights up when the power is switched on with the preset channel button of the remote control. This display indicates that the power will be switched off about 10 minutes after the end of cassette or CD play, or about 10 minutes after the "TUNED" indicator goes out.
This flashes for about 10 seconds when the MEMORY button is pressed during presetting.
These indicate the FM reception mode.
STEREO : Lights when receiving stereo broadcasts.
AUTO : Lights when the auto mode is set with the MONO/STEREO button.
MONO : Lights when the mono mode is set with the MONO/STEREO button.

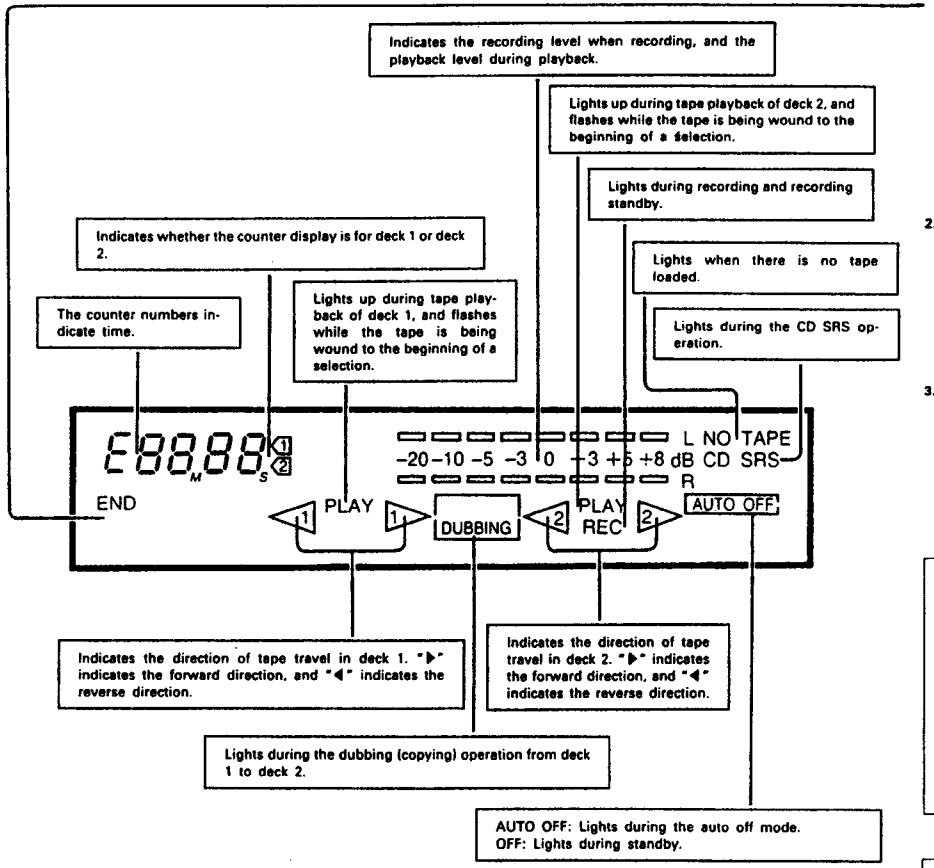
Trap Door

- To open the trap door, press area of the PUSH OPEN ⏏ indication at the upper right of the panel. When the door lock is released, open the door with your hand.
- To close the trap door, press the indicated area at the upper right of the panel and lock the door.

NOTE:

- The " ◷ " of the timer standby display will not light up unless the current time and the timer have been set.
- When the FUNCTION button is used to switch the function while "AUTO OFF" is lit, the auto on/off mode is cancelled and the display goes out.
  Also note that when the play button of one of the components (CD player or cassette deck) is pressed while "AUTO OFF" is lit, causing the function to change, the auto on/off mode will not be cancelled and the display will remain lit.

CASSETTE DECK DISPLAY

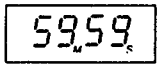

Indicates the recording level when recording, and the playback level during playback.
Lights up during tape playback of deck 2, and flashes while the tape is being wound to the beginning of a selection.
Lights during recording and recording standby.
Indicates whether the counter display is for deck 1 or deck 2.
Lights when there is no tape loaded.
The counter numbers indicate time.
Lights up during tape playback of deck 1, and flashes while the tape is being wound to the beginning of a selection.
Lights during the CD SRS operation.
L NO TAPE
-20 -10 -5 -3 0 +3 +5 +8 dB CD SRS
R
END
PLAY
DUBBING
PLAY REC
AUTO OFF
Indicates the direction of tape travel in deck 1. "▶" indicates the forward direction, and "◀" indicates the reverse direction.
Indicates the direction of tape travel in deck 2. "▶" indicates the forward direction, and "◀" indicates the reverse direction.
Lights during the dubbing (copying) operation from deck 1 to deck 2.
AUTO OFF: Lights during the auto off mode.
OFF: Lights during standby.

The direction of tape travel indicators also serve to indicate whether a cassette tape is loaded. These indicators do not light up when the tape is stopped or when there is no cassette tape loaded.

USING THE TAPE COUNTER

1. Tape Counter Display

- The tape counter indicates the elapsed time of the running tape in minutes and seconds.



- The counter is reset to 00.00 when the tape is ejected and loaded, and by the COUNTER RESET button.
- Making a memo of the contents of a recording and the range of the counter numbers while you are recording or playing back a tape will be convenient when you search for a portion of the tape you would like to listen to or when you search for the next portion you would like to record.

2. Tape Size Selector

- Match the tape size with the tape being used.
- Press the TAPE SIZE button until the desired tape size is displayed, then press the button again while the tape size is being displayed to set it. With each press of the button, the display will change according to the following cycle.

→ C46 → C50 → C54 → C60 → C74 → C90 → C100 → C120 → C54L ← C50L ← C46L ←

※ C46L, C50L, and C54L indicate large-hubbed cassettes.
※ Only values included in the display can be set.

3. END Display

This display indicates that the tape is reaching the end during recording or playback.

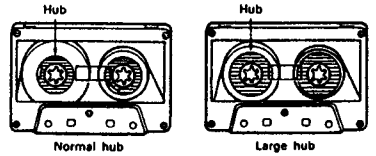
- Match the tape size with the tape you are going to use.
- The END indicator will start flashing when the remaining time to the end of the tape is about 5 minutes. (Note that this will be the case only when the TAPE SIZE setting and the length of the tape are in agreement. When the tape used and the TAPE SIZE setting differ, a large error may arise in the time at which the END indicator starts flashing.)
- When the tape has been recorded or played back to its end, the flashing of the END indicator will change to steady lighting.

※ Note that this indicator is only a guide and its operation will vary according to the size of the hub diameter of the tape as well as with differences of tape thickness, so that the END indicator might not light in some cases.

NOTE:

This deck's linear tape counter has been set for the following cassette tape lengths: C46, C50, C54, C60, C74, C90, C100, C120, C46L, C50L, and C54L. (L indicates large-hubbed cassettes.)
Using a tape that lies outside of this range, or a tape with a different length than the displayed lengths, will result in error. When using a tape that is not included in the TAPE SIZE selection, select the tape size closest to the length of the tape to be used. (This will reduce the error.)
The linear tape counter is not accurate like a clock. The thickness of the tape will differ depending on the type of tape used (tape position and time), and so there will be some error introduced. Error also arises from the difference between tapes with smaller and larger hubs.

- Large hubs are ones with a diameter of about 27 mm. Note that if the hub is larger than this, there will be a large error in indicating the tape travel time.



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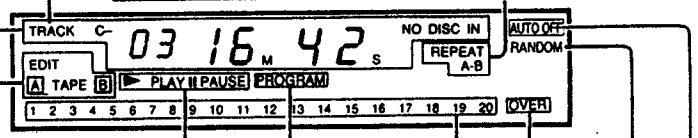
CD PLAYER DISPLAY

Tape type and remaining time display
During the editing operation, C-00 lights and the tape time is displayed.

Track number display
00 is displayed when the disc data cannot be read properly.
When a disc is loaded:
- The total number of tracks is displayed in the stop mode.
- The track number is displayed in the play and program modes.
- [[or]] is displayed when the innermost or outermost section of the disc is reached in the manual search mode.

Time display
0000 is displayed when the disc data cannot be read properly.
When a disc is loaded:
- The elapsed playing time is displayed in the stop mode.
- The elapsed time for the track currently playing is displayed in the play and pause modes.
- The elapsed time for the programmed tracks is displayed in the program mode.

The indicators switch as follows when the REPEAT button is pressed in the play mode:
First press: REPEAT (single track repeat) The repeated track number lights on the music calendar.
Second press: REPEAT (all tracks repeat) The track numbers of the tracks on the disc light.
Third press: REPEAT A-
Fourth press: REPEAT A-B
Fifth press: No display
- When track 21 or higher is repeated in 1-track repeat, the TRACK number flashes.



▶ PLAY lights when the disc is playing, and II PAUSE lights when in the pause mode.

This lights when there are 21 or more tracks on the disc.

PROGRAM lights during the programmed selection mode.

This lights when the RANDOM button is pressed.

AUTO OFF: Lights during the auto off mode.
OFF: Lights when the power is switched off.

During the editing operation, EDIT [A] TAPE lights up, the remaining time for side A of the tape is indicated on the time section of the display, the track numbers set for side A light on the calendar section of the display, while the track numbers set for side B flash. When the TAPE A/B button is pressed, [A] goes off, [B] lights, and the remaining time and track numbers set for side B are indicated in the same way.

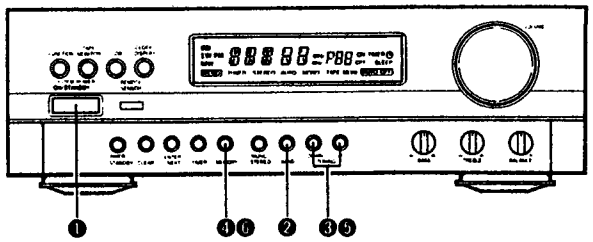
Music calendar display
This indicates the track numbers on the disc to a maximum of 20.
The track numbers go off after the corresponding tracks are played.
In the program mode, the track numbers of the programmed tracks are indicated to a maximum of 20.
All track numbers from 1 to 20 light when the disc data cannot be read properly.

- NO DISC lights on the display if no disc is loaded, or if the disc is loaded upside-down or is heavily scratched or dirty.

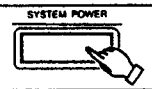
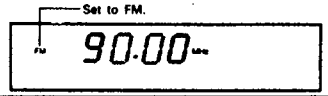
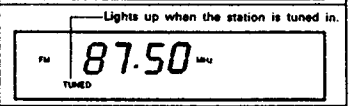
6 LISTENING TO RADIO BROADCASTS

(Check that connections are proper, referring to Page 5)

TUNING

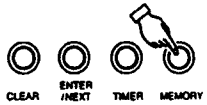
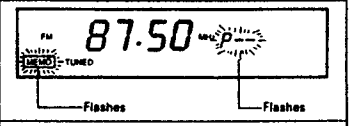
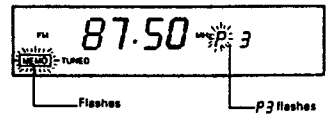
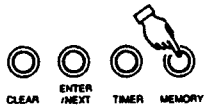
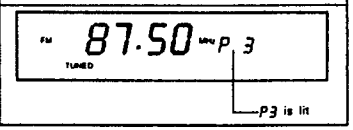


Example: Tuning to 87.50 MHz, FM

1	Set the VOLUME control to the minimum position, then press the SYSTEM POWER button.		
2	Select the FM band with the BAND button.		
3	Use the UP and DOWN buttons to set the frequency to 87.50 MHz.		

Presetting MW, LW and FM Stations

Example: Presetting the (currently tuned) FM 87.50 MHz to preset number 3

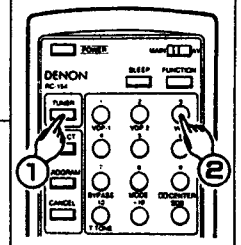
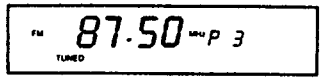
4	Press the MEMORY button. [MEMO] flashes for 10 seconds.		
5	Use the UP and DOWN buttons to call up the number to which you want to preset the station. Or, directly press the number buttons on the remote control unit. The preset number will flash.		
6	Press the MEMORY button while [MEMO] is flashing.		

Up to 30 MW, LW and FM stations can be preset at random using this procedure.

Auto Tuning
- When the TUNING buttons are pressed, the frequency changes in steps of 50 kHz for FM, 9 kHz for MW and 1 kHz for LW.
- If the TUNING UP or DOWN button is held in for more than 1 second, the frequency continues to change when the button is released. The next station is tuned in automatically and the tuning stops there. Note that tuning will not stop if the antenna input is weak and the [TUNED] indicator does not light. To stop the auto tuning, press the UP or DOWN button again.

Listening to Preset Stations

Example: Listening to the FM station preset at number 3

1	Press the TUNER button on the remote control unit.		
2	Press button "3" on the remote control unit.		

FM Stereo Reception

- When the MONO/STEREO button is pressed (which lights the AUTO and MONO indicators) and an FM stereo broadcast is received, the STEREO indicator lights and the station is received in stereo. If the MONO indicator is lit by pressing the MONO/STEREO button, the STEREO indicator goes off and the station is received in monaural.

Notes on Presetting

- When an FM station is preset, the auto or monaural mode is also set, so check the display before presetting the station.
- If a station is preset to a number at which another station has previously been preset, the previous station is cleared and the new station is preset.
- If the power cord is unplugged, the preset memory is not cleared immediately, but will be cleared if the cord is left unplugged over a long period. Should this happen, preset the stations again.

7 USING THE TIMER

Setting the Timer

- Be sure to set the current time.
- Regular timer: The power can be switched on and off once every day at the same time. (Wake-up music)
- Sleep timer: The power can be set to turn off in up to 60 minutes in steps of 10 minutes using the remote control unit. (Bedtime music)

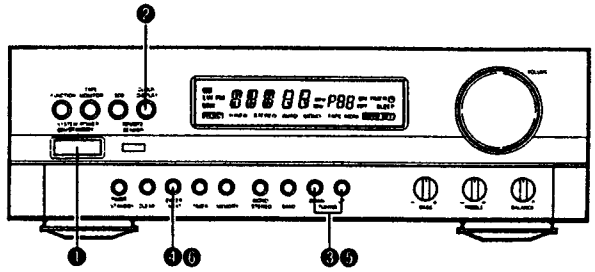
Be sure to preset stations before setting the timer.
Refer to "Presetting MW, LW and FM Stations" on Page 9.

- Turn the standby switch off when not using the timer.

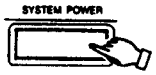
Power Failure

Should a power failure occur or if the power cord becomes unplugged from the power outlet, 0:00 or the time at which the power failed will flash on the time display. If this happens, reset the current time.
(Reset the current time and timer settings. If 0:00 was displayed, also reset the stations preset on the tuner.)
The standby mark starts flashing if there is a power failure or the power cord is unplugged while the standby mark is lit. If this happens, reset the time and the timer. (If the display reads 0:00, also reset the tuner's preset channels.)
To make the standby mark stop flashing, press the TIMER button, then press the TIMER or CLEAR button while "FUNC" is displayed.

Setting the Current Time (A 24-hour clock display is used.)

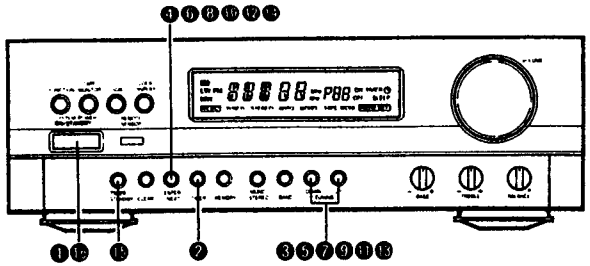


Example: Setting to 19:30 (7:30 p.m.)

1	Press the SYSTEM POWER button.		
2	Hold in the CLOCK/DISPLAY button for 3 seconds or longer.		0:00 The hour's place flashes. (All places flash if the time has already been set.)
3	Set the hours with the UP and DOWN buttons.		19:00 The set places flash.
4	Press the ENTER/NEXT button.		19:00 The minutes' places flash.
5	Set the minutes with the UP and DOWN buttons.		19:30 The set places flash.
6	Press the ENTER/NEXT button at the sound of a time signal. The time display lights steadily and the clock starts keeping the time.		19:30 The display lights steadily and the clock starts to count from 0 seconds.

Setting the Timer

(Preset the MW, LW and FM stations in advance)



Example: Setting the timer to turn on at 12:35 and off at 12:56.
90.00 MHz FM is being received on preset number "1".
87.50 MHz FM is set to preset number "3".

1	Press the SYSTEM POWER button.	SYSTEM POWER, TIMER
2	Press the TIMER button.	FUNC
3	Press the UP and DOWN buttons to display "TUNER".	DOWN, UP, TUNING — TUNER
4	Press the ENTER/NEXT button.	ENTER /NEXT — 87.50 P 3 (Flashes)
5	Press the UP and DOWN buttons to set the preset number.	DOWN, UP, TUNING
6	Press the ENTER/NEXT button.	ENTER /NEXT — 0:00 P 3 (Lights up.)
7	Use the UP and DOWN buttons to set the hour at which the timer is to switch on.	DOWN, UP, TUNING — 12:00 P 3 (Flashes)
8	Press the ENTER/NEXT button.	ENTER /NEXT — 12:00 P 3
9	Use the UP and DOWN buttons to set the minutes at which the timer is to switch on.	DOWN, UP, TUNING — 12:35 P 3
10	Press the ENTER/NEXT button.	ENTER /NEXT — 0:00 P 3 (Flashes, Lights up.)
11	Use the UP and DOWN buttons to set the hour at which the timer is to switch off.	DOWN, UP, TUNING — 12:00 P 3 (Flashes)
12	Press the ENTER/NEXT button.	ENTER /NEXT — 12:00 P 3
13	Use the UP and DOWN buttons to set the minutes at which the timer is to switch off.	DOWN, UP, TUNING — 12:56 P 3
14	Press the ENTER/NEXT button.	ENTER /NEXT — 90.00 P 1
15	Press the TIMER STANDBY button.	TIMER STAND BY — 90.00 P 1 (Lights up. (See NOTE))
16	Press the SYSTEM POWER button.	SYSTEM POWER — 10:15 (The illumination goes off and the current time is displayed. TIMER ◷ displayed)

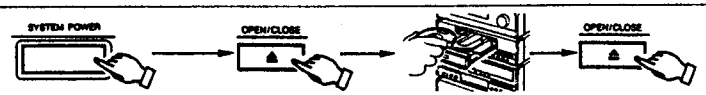
- When the TIMER STANDBY button is pressed and the " ◷ " mark is lit, the timer will function at the same times each day.
- To switch off the timer, press the TIMER STANDBY button and turn off the " ◷ " mark.

NOTE:

The timer standby mark " ◷ " will not light unless the current timer has been set. Should this be the case, set the current time, then press the TIMER STANDBY button.

Ways to Use the Timer

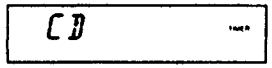
Example 1: Waking up to the music of a compact disc.

1 

Press the tuner-preamplifier's SYSTEM POWER button to switch on the power. → Press the CD player's OPEN/CLOSE button to open the tray. → Set the compact disc in the tray. → Press the OPEN/CLOSE button again to close the tray.

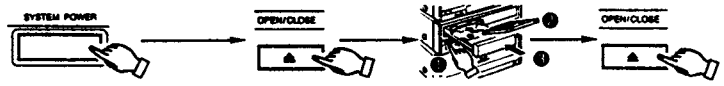
2 Press the tuner-preamplifier's TIMER button.

3 Press the UP and DOWN buttons of the tuner-preamplifier to display "CD".



4 Follow steps 6 to 16 under "Setting the Timer" on Page 11.

Example 2: Waking up to the music of a cassette tape.

1 

Press the tuner-preamplifier's SYSTEM POWER button to switch on the power. → Press the cassette deck's OPEN/CLOSE button to open the tray. → Load the cassette tape. → Press the OPEN/CLOSE button again to close the tray.

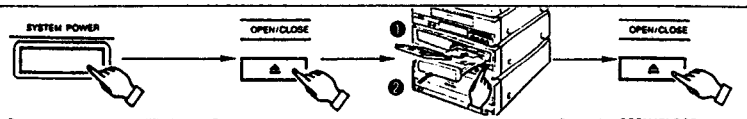
2 Press the tuner-preamplifier's TIMER button.

3 Press the UP and DOWN buttons of the tuner-preamplifier to display "TAPE".

4 Follow steps 6 to 16 under "Setting the Timer" on Page 11.

- The tape will be played back in the direction indicated by the tape direction indicator in the tape deck on the side of the tape counter display.

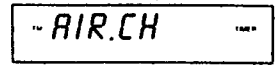
Example 3: Unattended recording of radio broadcasts ("air checks")

1 

Press the tuner-preamplifier's SYSTEM POWER button to switch on the power. → Press the deck 2 OPEN/CLOSE button to open the tray. → Load the cassette tape to which you will record. → Press the OPEN/CLOSE button again to close the tray.

2 Press the tuner-preamplifier's TIMER button.

3 Press the UP and DOWN buttons of the tuner-preamplifier to display AIR.CH.



4 Follow steps 4 to 16 under "Setting the Timer" on Page 11.

- Timer recording starts in the direction indicated by the tape direction indicator of deck 2.
- Check that the tape direction and REV MODE switch settings are as desired.
- The section of leader tape at the beginning of the tape cannot be recorded. To avoid missing the beginning of the recording, set the starting time to about 1 minute before the program is scheduled to start.

Checking the Timer Settings

To check the timer settings, switch on the power of the tuner-preamplifier, press the TIMER button, then press the ENTER/NEXT button. The timer start mode, reception band, preset number, on time, and off time are displayed in order each time the ENTER/NEXT button is pressed. One more press returns the display to the reception frequency.
When the on time and off time have not been set, 0000 flashes and there is no transition to the next display.

Changing the Timer Settings

When the timer setting operation is repeated, the previous settings are deleted and the new settings are set.

Deleting the Timer Settings

The timer settings can be cleared by pressing the TIMER button and then while FUNC is being displayed, pressing the TIMER button again or pressing the CLEAR button.

Note about the Set Timer

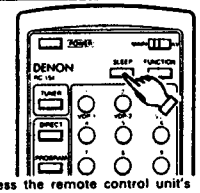
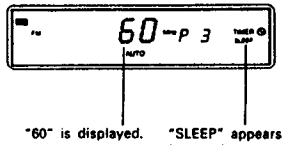
If the set time of the timer is reached while the power is on, the timer settings will take over and there will be a switch to the function that has been set on the timer.

Cancelling the Timer

Press the TIMER STANDBY button and the " ⏲ " mark will go off.

Setting the Sleep Timer

(Use the remote control unit for these operations.)
Example: Setting the power to switch off in 50 minutes.

	Currently receiving 87.50 MHz, FM.	~ 87.50 ~	
1	 Press the remote control unit's SLEEP button.	 "60" is displayed. "SLEEP" appears and flashes for 5 seconds.	
2	Press the SLEEP button again while "SLEEP" is flashing.	"50" is displayed, and the frequency display (87.50) reappears after 5 seconds.	The power is switched off after 50 minutes.

- If the sleep timer and regular timer settings overlap, the sleep timer is given priority.
- Do not press the TIMER STANDBY button after the power has been switched on with the timer. If this is done, the timer will not function properly.
- If the same time is set for the on time and off time, the power will not be switched on even when the "STANDBY" indicator is lit.
- If the timer is set for an AM or FM station and the on time of the timer is reached while listening to another station, the tuner switches to the station which was set with the timer.
- If the display is not normal, unplug the power cord, then holding in the MEMORY button and the BAND button, plug the power plug into the power outlet. This will reset the tuner to the initial settings and provide a proper display. If this is done, reset the preset stations, current time, and timer settings.

Cancelling the Sleep Timer

- To cancel the timer while it is operating in the sleep mode, press the SLEEP button, and while "SLEEP" is flashing, press the CLEAR button on the tuner-preamplifier.
- Press the SLEEP button and continue to press it until the power is switched off. When the power is switched off the sleep timer will be cancelled.

8 CASSETTE DECK

Before Recording and Playback

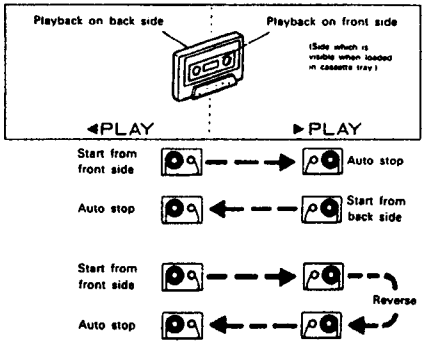
Auto Reverse

This deck is equipped with an auto reverse mechanism, so cassette tapes can be played and recorded on both sides or played continuously without having to turn them over.

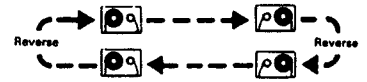
■ Direction of tape travel
This deck has two play buttons, one for the forward direction (front side) and another for the reverse direction (back side). The side being played can be changed during playback by pressing the opposite play button.

■ Reverse mode
Set the reverse mode switch (REV MODE) as follows:

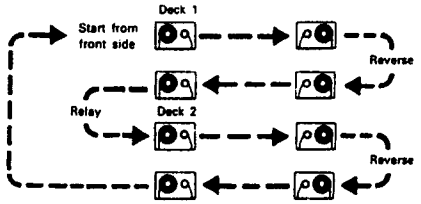
- **Single-side recording/playback mode (⇄)**
  In this position, only the front side or the back side of the cassette tape is played or recorded. (The tape stops automatically when the end of that side is reached.)
- **Two-side recording/playback mode (⇉)**
  In this position, when the end of the front side is reached, recording or playback automatically switches to the back side and continues from there. (The tape stops automatically when the end of the back side is reached.)
- **Continuous playback mode (⟲)**
  When tape is loaded in only one of the decks, playback continues until the STOP button is pressed.
- **Relay playback mode (⟲)**
  When tapes are loaded in both decks, playback continues from deck 1 onto deck 2, and then back again, as shown in the diagram at the right.



- If you start playing or recording from the back side, the tape will stop automatically at the end of the back side.

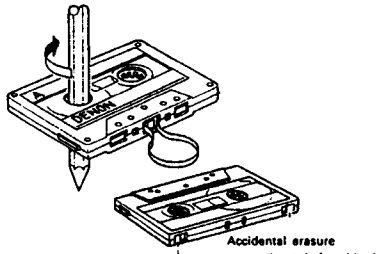


- The reverse recording/playback mode (⇉) is set automatically during recording.



Cassette Tapes

■ Handling Precautions
- C-120 cassette tapes
  Avoid using 120-minute cassette tapes, since they have extremely thin tape which tends to become wound onto the capstans or pinch rollers.
- Tape slack
  If the tape is slack, it may become wound onto mechanism parts or otherwise damaged. Take up the slack with a pencil before loading the cassette.

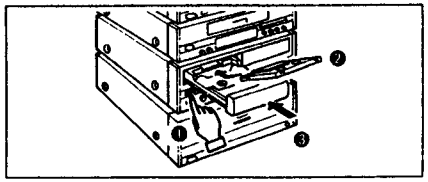


■ Storage Precautions
- Avoid storing in the following places:
  - Hot, humid places
  - Dusty places
  - Places exposed to direct sunlight
  - Near magnetic fields (TVs, speakers, etc.)
- Store the cassette tape in a case equipped with stoppers to keep the tape from coming slack.

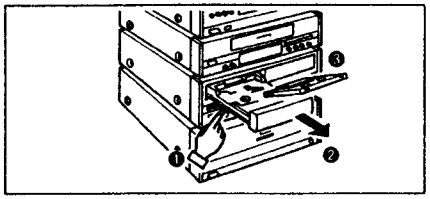
■ Protecting Cassette Tapes From Being Erased Accidentally
- Cassette tapes are equipped with accidental erasure prevention tabs. To protect recorded tapes from being erased accidentally, use a screwdriver, etc., and break these tabs off.
- To record on a cassette tape whose accidental erasure prevention tabs have been broken off, place a pieced of cellophane tape over the hole.

Loading and Unloading Cassette Tapes (Common for Deck 1 and Deck 2)

- **Loading**
  ① Press the OPEN/CLOSE button (⏏) to open the cassette tray.
  ② Set the tape in the cassette tray with the open side (on which the tape is exposed) facing away from you.
  ③ Press the OPEN/CLOSE button again to close the tray.



- **Unloading**
  ① Press the STOP button (■).
  ② Press the OPEN/CLOSE button (⏏) to open the cassette tray.
  ③ Remove the cassette tape.



Check the following before recording or playing cassette tapes:
1. Is the head dirty?...
   The sound quality will be poor if the head is dirty. Refer to Page 21.
2. Are the accidental erasure prevention tabs broken off?...
   Recording is not possible if these tabs are broken off. Refer to Page 13.

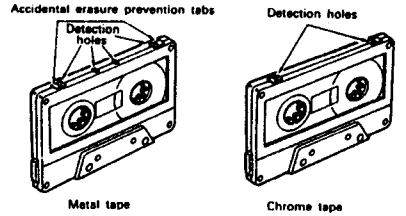
NOTE:
- Load the cassette tape on an angle with the open side facing away from you. Loading it in the opposite direction can cause damage.
- Do not press the OPEN/CLOSE button during playback or recording. Always press the STOP button before pressing the OPEN/CLOSE button.

Using the Tape Counter (Linear Tape Counter)
- This counter displays the elapsed running time of the tape in minutes and seconds.
- The counter can be reset to 0:00.00 by pressing the COUNTER RESET button. Or, the counter will also be reset when the tape is loaded or unloaded.
- Making a memo of the contents of a recording and the range of the counter numbers while you are recording or playing back a tape will be convenient when you search for a portion of the tape to which you would like to listen.

NOTE:
- This deck's linear tape counter has been set for the following cassette tape lengths: C46, C50, C54, C60, C74, C90, C100, C120, C46L, C50L, and C54L. (L indicates large-hubbed cassettes.) Using a tape that lies outside of this range, or a tape with a different length than the displayed lengths, will result in error. When using a tape that is not included in the TAPE SIZE selection, select the tape size closest to the length of the tape to be used. (This will reduce the error.)
- The linear tape counter is not accurate like a clock. The thickness of the tape will differ depending on the type of tape used (tape position and time), and so there will be some error introduced. Error also arises from the difference between tapes with smaller and larger hubs, and shows up in the remaining tape display (END mark).

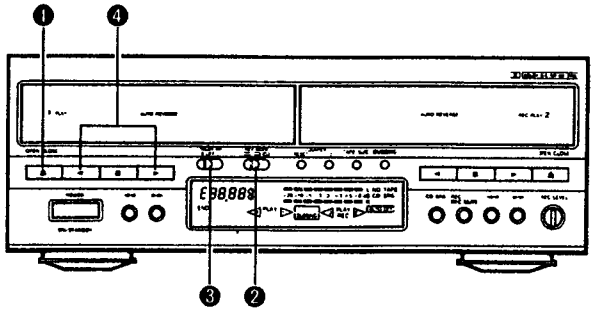
Auto Tape Selector Mechanism

This deck is equipped with an auto tape selector mechanism which uses the detection holes in the cassette halves to automatically set the recording bias and equalization best suited for that type of tape.
- Do not use ferrichrome tapes.
- Use metal tapes equipped with detection holes. (Use of the old type of metal tape without detection holes will result in the sound having an emphasized treble region.)

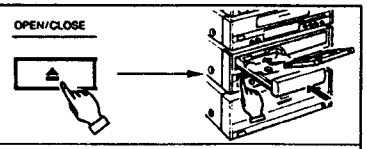
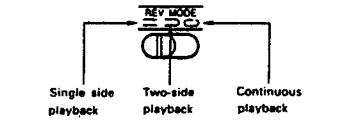


9 PLAYING CASSETTE TAPES

(Single Side Playback, Two-Side Playback, and Continuous Playback)



- Functions common for deck 1 and deck 2.
- When operating from the remote control unit, the operation switches between deck 1 and deck 2 each time the DECK 1/2 button is pressed. The counter indicator (1 or 2) lights for the selected deck.

1	Press the OPEN/CLOSE button, and load a recorded tape into the tray. Refer to Page 14.		Loading the tape The tape can be loaded easily by inserting it at an angle. Removing the tape The tape can be removed easily by lifting it out toward yourself at an angle.
2	Set the REV MODE switch. Refer to Page 13.		
3	Set the DOLBY NR switch. Refer to Page 6 ❷.	Set to B or C (as indicated on the tape) for tapes recorded with Dolby NR.	
4	Press the play button (▶ or ◀).	Playback starts in the direction of the button pressed.	Press the stop button ■ to stop the playback.

PLAYING CASSETTE TAPES

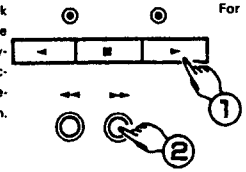
Using the MS (Music Search) Function and the Music Search Display

Using the MS (Music Search) Function

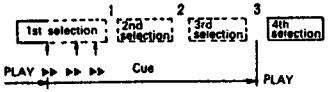
■ **Use this function to move to the beginning of the following section or return to the beginning of the current selection.**

① Press ▶ or ◀.
② Press ▶▶ or ◀◀.

- In the rewind direction, playback starts from the beginning of the selection which is currently playing, and in the fast-forward direction, playback starts from the beginning of the following selection.



The tape skips by a number of selections equal to the number of times the ▶▶ or ◀◀ button is pressed.
For example:



- For the normal fast-forward or rewind operations, press the stop button ■ before pressing the ▶▶ or ◀◀ button.

Display During the Music Search Operation

During the music search operation, the number of selections being skipped is indicated on the tape counter, and this number decreases each time a blank section is detected (for example, 3 → 2 → 1).

- When skipping back to a previous selection

P-03 ←Number of tracks to be skipped
↑This lights when skipping backward

- When skipping ahead to a following selection

P 05 ←Number of tracks to be skipped

Adjustment of the Recording Input Level Control

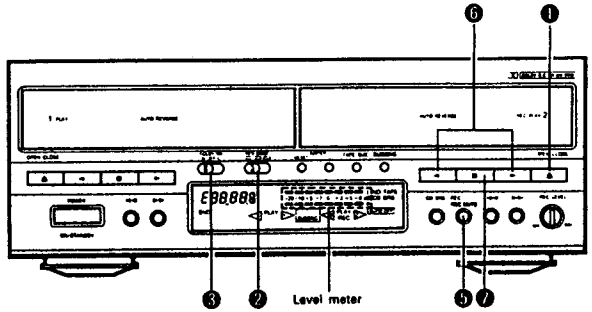
Too high a recording level will result in a recording which has a high degree of distortion, whereas too low a recording level will result in a high degree of noise. Adjustment of the recording input level is of the utmost importance in making a well-balanced recording.

Guide to Recording Input Levels

Type I (normal) tapes	0 dB
Type II (CrO_2) tapes	+3 dB
Type IV (metal) tapes	+3 dB

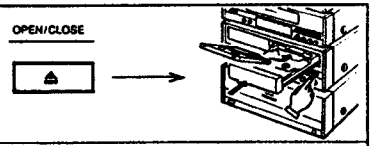
NOTE:
The optimum recording level will actually differ depending on the source and the type of tape, and so a trial recording should be made.

10 RECORDING CASSETTE TAPES

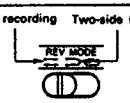


- The positions of the VOLUME and tone controls do not affect the sound being recorded.

1 Press the OPEN/CLOSE button ⏏ for deck 2 and load the tape to which you will record. Refer to Page 14.



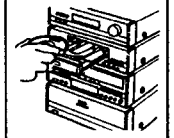
2 Set the REV MODE switch to ⇄ or ⊃. Refer to Page 13.



3 Set the DOLBY NR switch. Refer to Page 6 ❷.

Set to B or C to record with Dolby Noise Reduction.

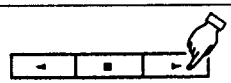
4

Recording from the radio	Recording from a VDP or DAT	Recording from a CD player
Press the BAND selector button. ↓ Select the station you wish to record. (Refer to Page 9.)	Press the tuner-preamplifier's FUNCTION button and select PHONO or DAT. ↓ Start playback on the VDP or DAT.	 Set the disc in the CD player. (Refer to Page 16.)

5 Press the REC/REC MUTE button.

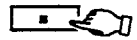
The REC (recording) indicator lights.

6 Press the ▶ or ◀ button. (Recording starts)



(5)

Press the CD SRS button. The CD SRS indicator lights and recording starts.

7 To stop recording, press the stop button. 

Adjust the recording level.

Adjust the lighting condition of the level meter with the recording level control. Refer to the section on Page 15.

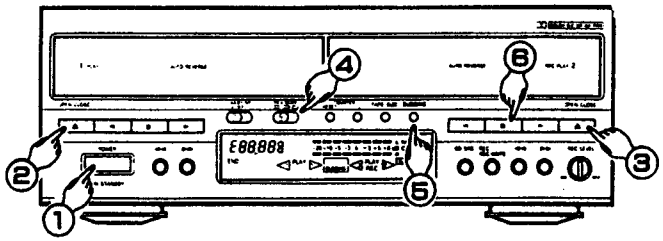
* When the CD SRS button is pressed, a 7-second blank portion is automatically created before recording starts.

RECORDING CASSETTE TAPES

- **Making a Synchro Dubbing (Copy)**

Synchro dubbing (tape copying) can be made at regular speed from deck 1 to deck 2.

Press the SYSTEM POWER button of the tuner-preamplifier.



① Press the SYSTEM POWER button of the tuner-preamplifier or press the POWER ON/STANDBY button of the deck.
② Press the OPEN/CLOSE (⏏) button and load the tape to be played back in deck 1.
③ Press the OPEN/CLOSE (⏏) button and load the tape to be recorded back in deck 2.
④ Set the reverse mode with the REV MODE switch.
(REV MODE ⇄ : ⊃ : ⊂⊃)
⑤ Press the DUBBING (synchro dubbing) button. Note that if the POWER ON/STANDBY button of the deck is pressed to switch on the power, the power of the tuner-preamplifier will automatically be switched on when the DUBBING button is pressed. You will be able to hear the audio normally.
⑥ To stop the dubbing, press the stop button (■) or press the DUBBING button.
The tape will automatically stop when it reaches the end and the synchro dubbing mode will be cancelled.

- Recording level during synchro dubbing
During synchro dubbing, the recording is made at the same level as the playback tape of deck 1, regardless of the position of the recording level control. Note that when the recording tape and the playback tape are of different types, the recording level might be different and so synchro dubbing should be done with the same type of tape if possible.

- Dolby NR mode during synchro dubbing
The Dolby NR system is automatically disengaged from the panel switch during synchro dubbing (even though the display does not change) and the tape is recorded with the Dolby NR mode of the playback tape.

- You can listen to the sound of another source while synchro dubbing.
Changing the source with the FUNCTION button or the CD play button will not interrupt the synchro dubbing.

- When synchro dubbing, both decks begin running in the forward direction (from the A side).

- The synchro DUBBING button is effective in starting the operation only when both tapes are in the stopped condition.

- The following buttons do not function during the synchro dubbing operation: forward play ▶, reverse play ◀, fast forward ▶▶, rewind ◀◀, and REC/REC MUTE.

- To ensure complete reproduction, use the same length of recording tape as the playback tape, and rewind both tapes to the beginning of side A before starting the dubbing operation.

- By setting the REV MODE switch to the ⊃ or ⊂⊃ position, when the playback tape of deck 1 reverses at the end of the tape on side A, the deck 2 tape will reverse at the same time and dubbing can continue on side B.

11 PLAYING CDs

Compact Discs

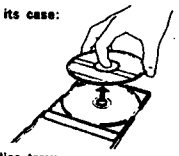
- Press the OPEN/CLOSE button (⏏) once to open the disc try, once again to close it.
- The disc tray can also be closed by pressing the play (▶) button.
When this is done, playback automatically starts from the first track on the disc (or if the tracks are programmed, the first programmed track).
- Load the disc with the label side facing up, being careful not to touch the disc surface.
- Load the disc with the disc tray open all the way.
- Set the disc securely in the tray guide at the center of the disc tray.
To play an 8 cm disc, place the disc in the sunken part at the center of the disc tray.
- When the disc tray is closed, the disc turns automatically for several seconds, and the number of tracks and total playing time appear on the display.

COMPACT disc DIGITAL AUDIO — Only discs with this mark can be played.

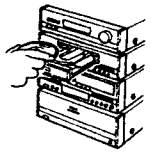
- For CDVs, only the audio part is played (the video part is not played).

Disc	Remarks
CD	
CDV	Only the audio part is played.
CD single (8 cm)	

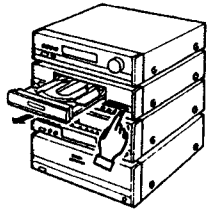
■ **When removing the disc from its case:**
As shown in the diagram, grasp the disc along the edges, gently press down on the hole in the middle with a finger, and lift the disc. It should come out easily.



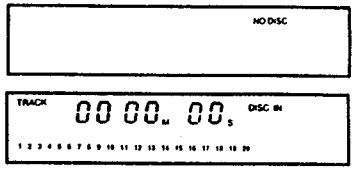
■ **When setting the disc in the disc tray:**
Always set the disc with the label side facing up. (Compact discs can only be played on one side). For 8 cm CDs, set the disc in the sunken part in the middle of the tray.



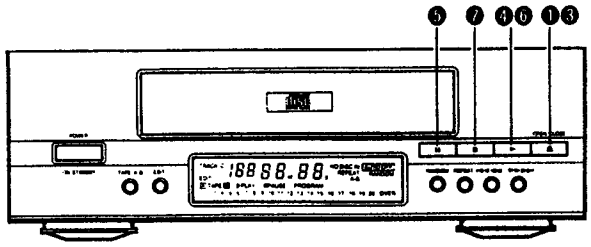
Handling the Disc Tray
Do not switch off the power or push or pull the disc tray when it is moving, since this may damage it.
If the cord of a set of headphones, etc., gets caught in the disc tray when it is closed, press the OPEN/CLOSE button (⏏) again.
- Never set objects other than CDs in the disc tray, as this can cause damage.



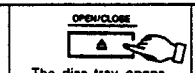
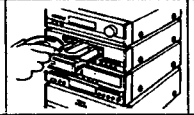
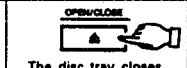
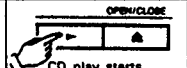
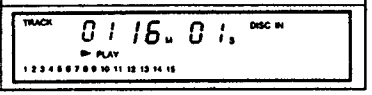
NOTE:
"NO DISC" is displayed on the display window when no disc is loaded, when the disc is loaded upside-down, or when the disc is not properly loaded. Also, " 00. 00. " may appear during playback of a CD if the disc is scratched or dirty. If this happens, the set will not operate when a normal operating button (other than the OPEN/CLOSE button) is pressed, so press the OPEN/CLOSE (⏏) button, remove the disc, clean it as necessary, then press the PLAY (▶) button again.



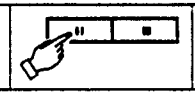
Regular Play



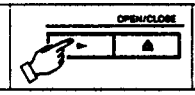
Example: Playing a CD with 15 tracks and a total playing time of 62 minutes 03 seconds, starting from track 1

1	Press the OPEN/CLOSE button.	 The disc tray opens.	
2	Set the CD in the disc tray. Refer to Page 16.		The display appears several seconds after the disc tray closes.
3	Press the OPEN/CLOSE button.	 The disc tray closes.	
4	Press the play button.	 CD play starts.	

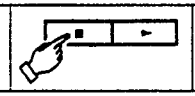
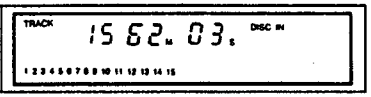
To stop play temporarily:

5	Press the pause button.		"▶ PLAY" goes off and "II PAUSE" appears. CD play is paused at the point the button is pressed.

To resume CD play:

6	Press the play button.		II PAUSE" goes off and "▶ PLAY" appears. CD play resumes from the point the pause button was pressed.

To stop CD play:

7	Press the stop button.		

NOTE:

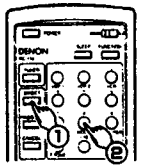
- 00 is displayed on the track number section of the display for several seconds after the disc is set, while the data on the number of tracks, playing time, etc., is being read from the disc. After this, the number of tracks and total playing time appear.

Various CD Play Functions

(Insert the disc before performing the following operations.)

❶ Playing Certain Tracks — DIRECT SELECTION

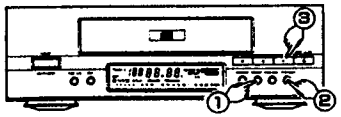
Example: Playing the 8th track
Perform this operation from the remote control unit.



① Press the DIRECT button.
② Press track button "8". "TRACK 8" appears on the display, and the 8th track begins playing.
- When the end of the track is reached, play continues on to the next track.

- For track numbers of 11 and higher, for example 15, press [+10] and [5]. For track numbers of 20 and higher, for example 23, press [+10], [+10], and [3]. For track number 20, press [+10] and [10].

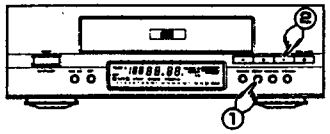
❷ Playing 1 Track Repeatedly — 1 TRACK REPEAT



① Press the REPEAT button once.
② Press the ⏮ ◀◀ or ▶▶ ⏭ button, and select the desired track.
③ Press the play button (▶) to start play.

- When the specified track finishes playing, the pickup returns to the beginning of that track and play is repeated.
- If the REPEAT button is pressed once during play, the track will be played repeatedly.
- If the REPEAT button is pressed once during programmed play, the track will be played repeatedly.
- If the REPEAT button is pressed once while the disc is stopped, the TRACK numbers indicator flashes and the 1 track repeat play mode is set.

❸ Playing All Tracks Repeatedly — ALL TRACKS REPEAT

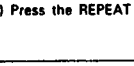


① Press the REPEAT button twice.
② Press the play button (▶) to start play.

- When the last track finishes playing, the pickup returns to the first track of the disc and play is repeated.
- If the REPEAT button is pressed twice during play, the disc will be played repeatedly.
- If the REPEAT button is pressed twice during programmed play, the program will be played repeatedly.
- If the REPEAT button is pressed twice while the disc is stopped, the TRACK numbers indicator lights and the all tracks repeat play mode is set.

❹ Playing a Specific Section Repeatedly — SECTION REPEAT

Example: The CD has a total of 15 tracks

1st time	(1) Press the REPEAT button during CD play. 	Only that track is played repeatedly, and that track number lights on the music calendar. * With a 1-track repeat of track 21 or higher, "TRACK No." flashes.
1st time	(2) Press the REPEAT button before CD play.	The total number of tracks flashes, and then ① the first track is repeated by pressing the play button ② when play is started by direct selection from the remote control or with the ⏭ or ⏮ button, only those selected tracks are played repeatedly.
2nd time	Press the REPEAT button before CD play or during CD play.	The track numbers contained on the disc light up on the music calendar, and all tracks are played repeatedly.
3rd time	Press the REPEAT button during CD play.	"REPEAT A-" lights up. If nothing else is done, all tracks are played repeatedly.
4th time	Press the REPEAT button during CD play.	"REPEAT A-B" lights up. The A-B section is played repeatedly.

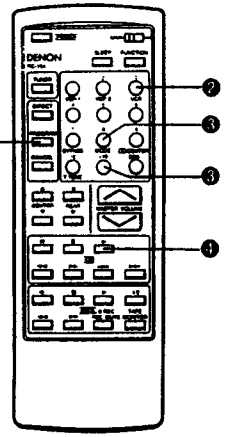
Pressing the REPEAT button once again returns the player to regular CD play.

❹ Playing Certain Tracks in any Desired Order — PROGRAMMED SELECTION

(Perform this operation from the remote control unit.)

***Example:* Programming track 3 to play first, track 18 to play second, on a CD with 18 tracks and a total playing time of 62 minutes, 3 seconds**

Setting and Playing the Program (Set the Slide Switch to the "MAIN" Side.)

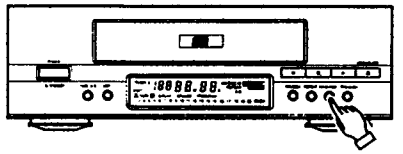
1	Press the PROGRAM button.		
2	Set track 3 to play first.		After 2 seconds The display when track 3 is set to play first Time of first track: 8 minutes, 00 seconds
3	Set track 18 to play second.		After 2 seconds The display when track 18 is set to play second Total time of tracks 1 and 2: 16 minutes, 05 seconds
4	Press the play button.		The tracks start playing in the programmed order.

- The numbers of the programmed tracks go off once the tracks are played.
- The time display will read "— — M — — S" if a track number of 31 or higher is set in the program.
- When a program is set during CD play after a direct selection, the track currently playing is set as the first track in the program.
- Up to 20 tracks of your choice from among track numbers 1 through 99 can be programmed with this CD player.
- If you attempt to set a track number that is greater than the number of tracks on the disc, that track number will not be displayed when the buttons are pressed.
- Programming is also possible when the disc tray is open. In this case, track numbers greater than the number of tracks on the disc can be programmed, but these are ignored when the disc is played.
- There is a silent interval of 4 seconds between tracks. This is has been designed to create a blank section of 4 seconds between selections when recording programmed tracks onto tape.
- The entire program is cleared when the disc tray is opened or closed (by pressing the ⏏ button).
- If you make a mistake when programming tracks, press the CANCEL button and program again. (Each press of the CANCEL button cancels the last track.)
- An A-B section repeat is not possible during programmed play.
- Other operations possible during programmed play:
  The quick search, pause, skip monitor, and other operations can be used during programmed play. To move to the beginning of the previous track with the quick search operation, press I◀◀ ◀◀ once, then once again while the time display reads '00M 00S. To move to the beginning of the following track, press ▶▶ ▶▶I once, regardless of the time display.
- Perform programming and canceling in the stop mode.

❺ Moving to the Next Track During CD Play — QUICK SEARCH

① Press the auto search forward button (▶▶ ▶▶I).
- Each press of the auto search forward button (▶▶ ▶▶I) moves the pickup to the beginning of following tracks.

❻ Moving Back to the Beginning of the Current Track During CD Play — QUICK SEARCH

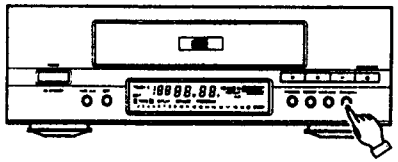


① Press the auto search backward button (I◀◀ ◀◀).
- Each press of the auto search backward button (I◀◀ ◀◀) during the search operation moves the pickup to the beginning of previous tracks.

❼ Searching for Tracks While Listening to the Sound — SKIP MONITOR

- Use this to skip through a disc listening to the sound at high speed.
  This function is convenient when searching for a certain section within a long track.
- Use the skip monitor function to find the desired position, then release the search button to start regular playback from there.

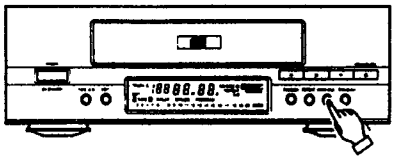
[1] Forward skip monitor



- The track number and elapsed playing time of the track being skipped through are indicated on the display.
- If the end of the last track on the disc is reached while pressing the search button, (]]) appears on the display and the skip monitor operation stops. To resume CD play, press the search backward button (I◀◀ ◀◀) until (]]) switches to the track number, then perform a different operation.

① During CD play, press and hold in the forward search button (▶▶ ▶▶I) to skip forward while listening to the sound.

[2] Backward skip monitor



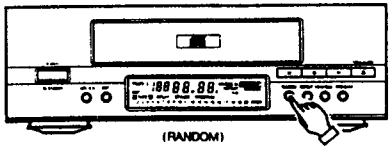
- The track number and elapsed playing time of the track being skipped through are indicated on the display.
- If the beginning of the first track on the disc is reached while pressing the search button, ([[) appears on the display and the skip monitor operation stops. To resume CD play, press the search forward button (▶▶ ▶▶I) until ([[) switches to the track number, then perform a different operation.

① During CD play, press and hold in the backward search button (I◀◀ ◀◀) to skip backward while listening to the sound.

If the forward or backward skip button is pressed during programmed CD play and released at a track which has not been programmed, the next programmed track will be played once that track has been played to the end.

❸ Playing Tracks in Random Order ..... RANDOM SEARCH

- The function plays each track on the disc once in random order.



- A press of the RANDOM button lights the RANDOM indicator to show that the random mode has been set. Random search will begin when the play button is pressed and the disc will start playing automatically.
- Simply pressing the RANDOM button during CD play will start the random search and start random play.
- Pressing the RANDOM button when a program has been set will play the programmed tracks in random order.
- Pressing the RANDOM button when repeat play has been set will play the tracks through randomly one time, and each time following this there will be a random search with a different pattern.
- An A-B section repeat is not possible during random play.
- During the search operation, the track numbers of the disc from track 1 to the last track will be repeatedly displayed at high speed in the TRACK NO. section, and the following tracks to be played will not be known from the end of the search to the time CD play begins.
- Pressing the RANDOM button when 1-track repeat has been set will automatically change the setting to all tracks repeat and these tracks will be played randomly.

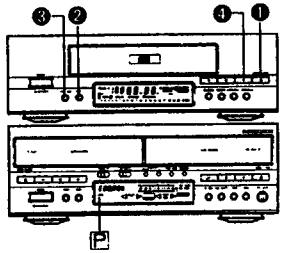
NOTE:

Random play is not possible during the edit operation.

Edited Recording onto Sides A and B of a Tape (EDIT)

Editing is possible with CDs containing up to 20 tracks.

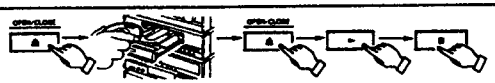
Before starting the edited recording operation, load the cassette tape to which you will record into deck 2 with side A facing up. The leader tape is automatically taken up before recording starts. (Set the REV MODE switch to the ⇄ position.)



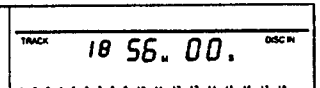
❶ Automatic Edited Recording ..... RECORDING IN THE SAME ORDER AS ON THE DISC

Example: Recording a disc with 18 tracks and a total playing time of 56 minutes onto a C-60 cassette tape

1



Press the OPEN/CLOSE button. → Set the disc. → Press the OPEN/CLOSE button. → Press the play button and set the function to CD. → Press the stop button.



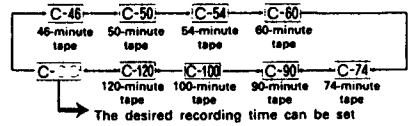
NOTE:

- With edited recording, side B of the tape will be recorded automatically even when the REV MODE switch of the deck is set to the ⇄ position.
- During edited recording, only the following buttons will function: the stop button of the CD or the OPEN/CLOSE button, and the stop button of the deck.
- When using a recorded tape for edited recording, the tape should be erased before use, since when the tape is longer than the set time, an unrecorded section of side B will remain after the tape stops.
  When a tape which has been recorded with this system is played back, there will be 4-second blank portions between tracks (for making it easy to reach the beginning of a track). This will differ from the actual silent portions between the tracks on the disc, and so there will be some error in the actual remaining time of the tape and the displayed time.

2

EDIT

Press the EDIT button to set the tape length.
Press the EDIT button four times when using a 60-minute (C 60) tape.
(The tape length is to total time of sides A and B.)
The display changes as follows each time the EDIT button is pressed. (When the tape time has already been set, the display will change in order starting at that time each time the EDIT button is pressed.)

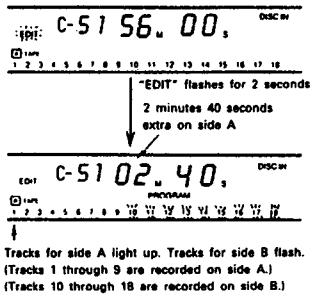


The desired recording time can be set when this is displayed.
(Method 1)

Example: For a 36-minute tape, use the ⏮◀◀ or ▶▶⏭ button to set 36.
To set the tape length using the remote control unit, use the number buttons. For example, in the case of a 30-minute tape, press +10 twice and press 10.

If you make a mistake, press the EDIT button to display C-00, then start over again.

Setting the desired recording time (Method 2)
Select a tape length close to the desired time, then make a fine adjustment using the ⏮◀◀ or ▶▶⏭ button.
For example, to set 51 minutes, select C-50, then press the ▶▶⏭ button once to set C-51.

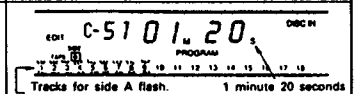


Tracks for side A light up. Tracks for side B flash.
(Tracks 1 through 9 are recorded on side A.)
(Tracks 10 through 18 are recorded on side B.)

3

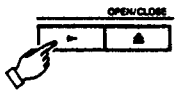
A/B button is pressed.
(Use this to check the extra time on side B.)

The display changes between sides A and B each time the TAPE

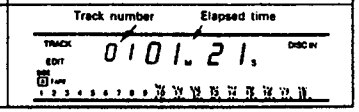


Tracks for side A flash. Tracks for side B light up.
1 minute 20 seconds extra on side B.

4



Press the play button.



- Note that in some cases, even if the tape is longer than the total playing time on the disc, it may not be possible to record all the tracks onto the tape, since they are divided onto sides A and B. In such cases, the OVER indicator flashes.

❷ Programmed Edited Recording ..... RECORDING CERTAIN TRACKS IN ANY DESIRED ORDER

① Follow the instructions under "PROGRAMMED SELECTION" on Page 18 to program the tracks.
② Perform steps 2 through 4 under the aforementioned "Automatic Edited Recording".

Programmed CD Play Using the Search Buttons (⏮◀◀ ▶▶⏭)

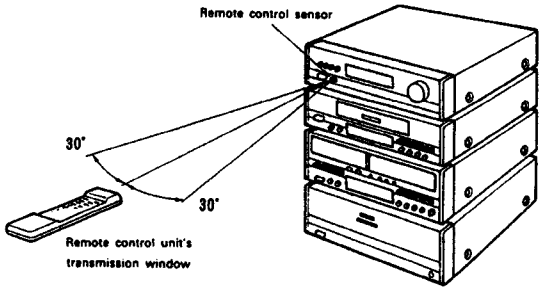
Pressing the PROGRAM button of the remote control unit will light up the "PROGRAM" indicator. When the disc is stopped, programming can be done with the search buttons (⏮◀◀ ▶▶⏭) on the CD player or with the search buttons (⏮◀◀ ▶▶⏭) on the remote control unit.

- Select the tracks with the search buttons, then press the PROGRAM button to program them.
- The search buttons (⏮◀◀ ▶▶⏭) can be used to change the track numbers continuously.
- After the track numbers have been selected with the search buttons, if the play button is pressed to start CD play before the PROGRAM button is pressed, the last track of the program set up to this point will be played.
  In this case, the tracks selected with the search buttons will not be programmed.

12 REMOTE CONTROL UNIT

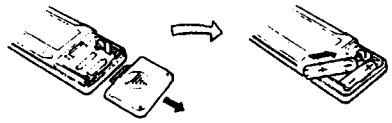
Cautions on Use

1. The D-250 is supplied with a remote control unit (RC-154) for system control.
2. Replace the batteries with new ones when the transmission distance possible with the remote control unit shortens.
3. For longer battery life, remove the batteries when not using the remote control unit for long periods.
4. When replacing batteries, use two new batteries. Never use an old battery with a new one.
5. Do not use two different types of batteries.
6. Do not heat batteries or take them apart.
7. Be careful that the remote control sensor is not exposed to direct sunlight or strong light from lighting fixtures.
8. The remote control sensor is located on the tuner preamplifier. Point the remote control unit at the sensor, then press the buttons for the desired operation.
9. Operate the remote control unit within the range illustrated in the diagram.

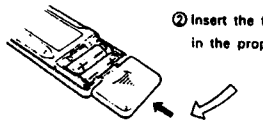


Inserting the Batteries

① Open the battery case lid on the back of the remote control unit.



② Insert the two batteries (R6P, AA) in the proper direction.



③ Set the battery case lid back in place.

≡ appears at the upper left corner of the tuner-preamplifier's display when a signal is received.

- The remote control unit can be used at a distance of about 7 meters from the remote control sensor, but this distance will be shorter if there are obstacles in the way or if the remote control is operated from an angle.

10. Do not press buttons on the remote control unit and on the main unit at the same time. Doing so will lead to a malfunction.
11. If ≡ appears on the tuner-preamplifier's display due to incident light even though the remote control unit has not been operated, it is best to move the set or place it in a different direction. Even if this happens, it will not cause a malfunction with remote control unit.
12. When adjusting the volume continuously with the remote control unit, the volume adjustment will stop if the remote control unit is moved away from the remote control sensor. Should this happen, press the button again to continue changing the volume.

Button Names and Functions

SLEEP
Press this to set the sleep timer.

POWER
Press this to switch on the power for the entire system or set the system to standby.

TUNER
Press this to listen to the preset stations.

CD Play

DIRECT button
Press for direct track selection of CD player.

PROGRAM button
Press for programmed selection of CD player.

CANCEL button
Press once during programming to cancel the last track programmed.

CENTER and REAR level
Use to adjust the volume of an optional AV amplifier. Press ▼ to lower the volume, ▲ to raise the volume.

Operating the CD Player

Pause button (II)
Press to temporarily stop CD play. Press the play button ▶ to resume play.

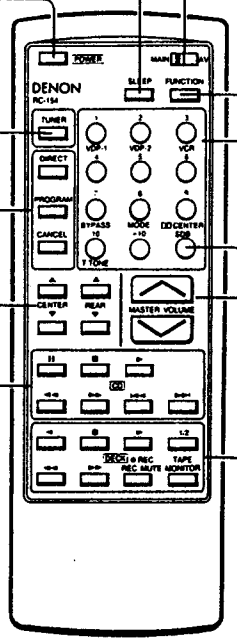
Stop button (■)
Press to stop CD play.

Play button (▶)
Press to start CD play.

Manual search backward button (◀◀)
Manual search forward button (▶▶)
Press these to quickly move backward or forward.

Backward skip monitor button (I◀◀)
Press during CD play to go back to the beginning of that track. Press the button again within 0.5 seconds to go back to the beginning of the previous track.

Forward skip monitor button (▶▶I)
Press during CD play to go forward to the beginning of the next track. Press the button again to go forward to the beginning of the track two tracks ahead.



MAIN/AV switch
Switch to the AV side when the system is used together with the optional AV amplifier. Usually, this switch is set to the MAIN side. When set to AV, the number buttons switch over to the functions indicated below them.

FUNCTION (input switching) button
Switches the function between TUNER, TAPE, CD, PHONO, and DAT.

Number buttons
After pressing TUNER, these buttons call up the preset stations.
When used with CD play, after pressing DIRECT or PROGRAM, these buttons specify the tracks to be played.

MASTER VOLUME
Adjusts the volume.
Press V to lower the volume, and Λ to raise it.

Operating the Cassette Decks

Deck 1/2 button
Press this to select the deck to be operated.

Stop button (■)
Press this to stop the tape deck.

Forward play button (▶)
Press this to play back or record in the forward direction.

Reverse play button (◀)
Press this to play back or record in the reverse direction.

● REC/REC MUTEE button (recording/recording mute button)
To set the recording mode when in the stop mode, press this button, then press either the "▶" or the "◀" button. When pressed during the recording or recording pause mode, a blank section of approximately 5 seconds is created on the tape, after which the deck is set to the recording pause mode.

Rewind button (◀◀)
Press this to rewind the tape.

Fast-forward button (▶▶)
Press this to fast-forward the tape.

TAPE MONITOR button
Use this to monitor the sound of the tape. When used in combination with a 3-head deck, the recorded sound can be monitored (from the tape).

SDB (Super Dynamic Bass)
Press this button for more powerful bass sound. Press again to return to the original setting.

When the MAIN/AV switch is set to the AV side, number buttons 4, 5, 6, and +10 can be used for the following operations. Use these buttons when a DENON AV amplifier having these functions is used with this system.
4 button → VCR-2
5 button → DBS
6 button → TV
+10 button → 3CH LOGIC

13 AUTO ON/OFF FUNCTION

- When the CD or deck play button, or the OPEN/CLOSE button is pressed from the standby mode, the power is switched on automatically, and the play or open/close operation is performed. The "AUTO OFF" indicator lights at this time.
- When play ends in this mode and there are no operations for 10 minutes, the power is automatically switched off and the system enters the standby mode. If there is no disc or cassette in the system, the power will be switched off in about 1 minute.
- When the disc tray or the cassette tray is open, the tray will close in about 1 minute.
- When the tuner number buttons (preset numbers) are pressed, the power will be switched on in the same way and the system will enter the auto off mode. In this case, the "TUNED" indicator will go off and 10 minutes later the power will be switched off.

14 IMPORTANT INFORMATION

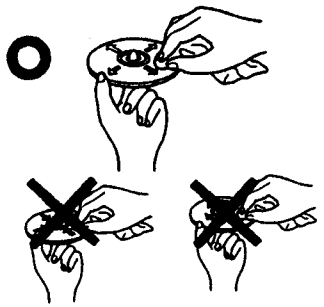
• Head Cleaning

After the cassette deck has been used for a while, powder from the tapes and dirt adhere to the head and lower the sound quality. Use a head cleaning cassette tape to clean.

NOTE:

Some of the cleaning sets on the market have a strong polishing effect which can damage the head.

- **Disc Cleaning**



Never use the following to clean discs:

- Solvents such as benzene or alcohol
- Cleaners containing abrasives
- Record sprays or cleaners
- Anti-static products

• Head Demagnetizing

The heads become magnetized after the deck has been used over a long period of time or if the heads are exposed to a magnetic field. This results in noise and reduced treble. In addition, there may be a reduction of the treble range of recorded tapes as well as noise produced on these tapes.

When the heads become magnetized, use one of the cassette tape head demagnetizers (erasers) available on the market to demagnetize the heads.

- For details, read the operating instructions of the demagnetizer.

Dust, fingerprints, or spittle on the disc can cause noise or skipping.

If the disc is dirty or if the player does not work properly, clean the disc as follows:

- Hold the disc as shown in the diagram, with the signal surface facing up (and the labelled side facing down).
- Using a soft cloth, wipe the disc gently from the inside straight towards the edges (as shown by the arrows).

- Do not wipe from the edges towards the center, or around the disc as you would wipe records.
- Do not use hard cloths or rub the disc forcefully, since the signal surface is susceptible to scratches.

15 SPECIFICATIONS

- **Tuner-preamplifier (UTP-250)**

Reception Frequency Range:	FM: 87.50 MHz to 108.00 MHz AM: 522 kHz to 1611 kHz (MW), 153 kHz to 279 kHz (LW)
Receiving Sensitivity:	FM: 1.5 µV, 75 ohms (SN ratio 30 dB) AM: 20 µV (SN ratio 20 dB, MW), 35 µV (SN ratio 20 dB, LW)
FM Stereo Separation:	40 dB (1 kHz)
Bass Adjustment:	100 Hz ±8 dB
Treble Adjustment:	10 kHz ±8 dB
Super Dynamic Bass:	80 Hz +8 dB
Jacks:	PREOUT: Output jacks PHONO: Input jacks DAT: Input jacks, recording output jacks Processor: Processor input/output jacks
Dimensions (max.):	270 (W) × 86 (H) × 330 (D) mm (10-5/8" × 3-25/64" × 13")
Weight:	3.2 kg (7 lbs 10 oz)
Power Supply:	AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption:	18 W

- **Amplifier (UPO-250)**

Rated Output Power:	50 W + 50 W (20 Hz to 20 kHz, 8 ohm)
Jacks:	6.3 mm headphone jack
Dimensions (max.):	270 (W) × 96 (H) × 330 (D) mm (10-5/8" × 3-25/32" × 13)
Weight:	4.1 kg (9 lbs 1 oz)
Power Supply:	AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption:	140 W

- **CD Player (UCD-250)**

Wow and Flutter:	Below measurable limits (±0.001% W. Peak)
Sampling Frequency:	44.1 kHz
Light Source:	Semiconductor
Dimensions (max.):	270 (W) × 86 (H) × 313 (D) mm (10-5/8" × 3-25/64" × 12-21/64")
Weight:	3.1 kg (6 lbs 13 oz)
Power Supply:	AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption:	15 W

- **Cassette Deck (UDRW-250)**

Type:	Horizontal 4-track, 2-channel auto reverse stereo cassette deck
Heads:	1 hard permalloy recording/playback head, 1 hard permalloy playback head, and 1 double-gap ferrite erase head
Tape Speed:	4.75 cm/s
Noise Reduction Circuits:	Dolby B and C NR
Usable Tapes:	Normal, chrome, and metal tapes
Dimensions (max.):	270 (W) × 96 (H) × 318 (D) mm (10-5/8" × 3-25/32" × 12-33/64")
Weight:	4.4 kg (9 lbs 11 oz)
Power Supply:	AC 230 V, 50Hz, AC 240 V, 50Hz (for U.K. model)
Power Consumption:	18 W

- **Remote Control Unit (RC-154)**

Type:	Infrared pulse
Number of Buttons:	41 (including 1 slide switch)
Dimensions (max.):	60 (W) × 177 (H) × 18 (D) mm (20-23/64" × 6-31/32" × 45/64")
Weight:	130 g (Approx. 6.4 oz) (including batteries)

* Maximum dimensions include controls, jacks, and covers. (W) = width, (H) = height, (D) = depth

- For improvement purposes, specifications and functions are subject to change without advanced notice.

16 TROUBLESHOOTING

1. Check that the connections are proper.
2. Check that you are operating the system according to the instructions in the manual.

Check the following table if the system does not seem to be working properly.
If the problem is not solved after checking these points carefully, the system may be malfunctioning. Switch off the power and contact your store of purchase.

	Symptom	Cause	Measures	See Page
Common	Power does not come on when POWER button pressed.	• Power cord not plugged into outlet.	• Plug cord into outlet properly.	5
	No sound produced from speakers.	• VOLUME control set to minimum. • Headphones are plugged in. • Speaker cables not connected to speaker terminals.	• Turn VOLUME control clockwise (↷). • Disconnect headphones. • Connect speaker cables properly.	6 6 5
	Treble not produced. Orientation of sound field not clear.	• Speaker polarities (⊕ and ⊖) not matched.	• Connect speaker cables properly. •	5
	Source other than the desired one is heard.	• Function selector button not set properly.	• Set to desired function.	6
Deck	Cannot record when REC/REC MUTE button pressed.	• No cassette tape loaded. • Accidental erasure prevention tabs of cassette broken off.	• Load tape. • Apply cellophane tape over holes.	14 13
	Sound is interrupted during playback and recording, or treble sound is low.	• Head dirty. • Tape stretched.	• Clean. • Replace tape.	21 –
	Wow (fluctuation) is heavy during playback and recording.	• Capstans and pinch rollers dirty.	• Clean.	21
	Buzzing noise heard during playback.	• Noise from TV. • (Some TVs produce noise.)	• Separate TV from system. • Turn off TV.	– –
Tuner	Hissing noise heard during FM reception.	• Antenna not pointed in proper direction. • Signals weak.	• Change direction of antenna. • Install outdoor antenna.	4 4
	Hissing or scratchy noise heard during AM reception.	• Noise from TV, etc., or interference from other stations.	• Turn off TV. • Change position of loop antenna. • Install outdoor antenna.	– – 4
	Hum noise heard during AM reception.	• Signals coming over power cord are modulated by power source frequency.	• Plug in cord in opposite direction. • Install outdoor antenna.	5 4
CD Player	Disc loaded but total number of tracks not displayed.	• Disc loaded upside-down. • Disc dirty. • Non-standard disc loaded.	• Reload disc. • Clean disc. • Replace with standard disc.	16 21 16
	Operation not performed when buttons pressed, or playback stops in middle of track.	• Disc loaded upside-down. • Foreign object in disc holder. • Disc dirty. • Disc scratched.	• Reload disc. • Remove disc and remove foreign object. • Clean disc. • Replace with non-scratched disc.	16 16 21 –
	Sound skips.	• Dust, fingerprints, or spittle on disc. • Disc scratched. • Player set in shaky, unstable place.	• Clean disc. • Replace with non-scratched disc. • Set player in stable place.	21 – –
	Buzzing noise mixed in with CD sound.	• Signals coming over power cord are modulated by power source frequency.	• Plug in cord in opposite direction.	5

Normal operation may not be possible if there is dirt or other substances on the surface of the internal objective lens or sensor.
These parts must be cleaned periodically depending on the place of installation.
For details, contact your store of purchase.

Avoid using ultrasonic humidifiers nearby.
If ultrasonic humidifiers are used nearby, the calcium, etc., included in the water may be scattered into the air, causing white dust to accumulate on the surface of the objective lens or sensor, resulting in improper operation.

Dew (Condensation) Phenomenon

Dew (water droplets) may form on the lens of the internal optical system or on the disc, or on the rotating parts of the tape deck in situations such as the following:

- Soon after a heater is put on.
- When the set is placed in a steamy or damp room.
- When the set is moved from a cold place to a warm room.

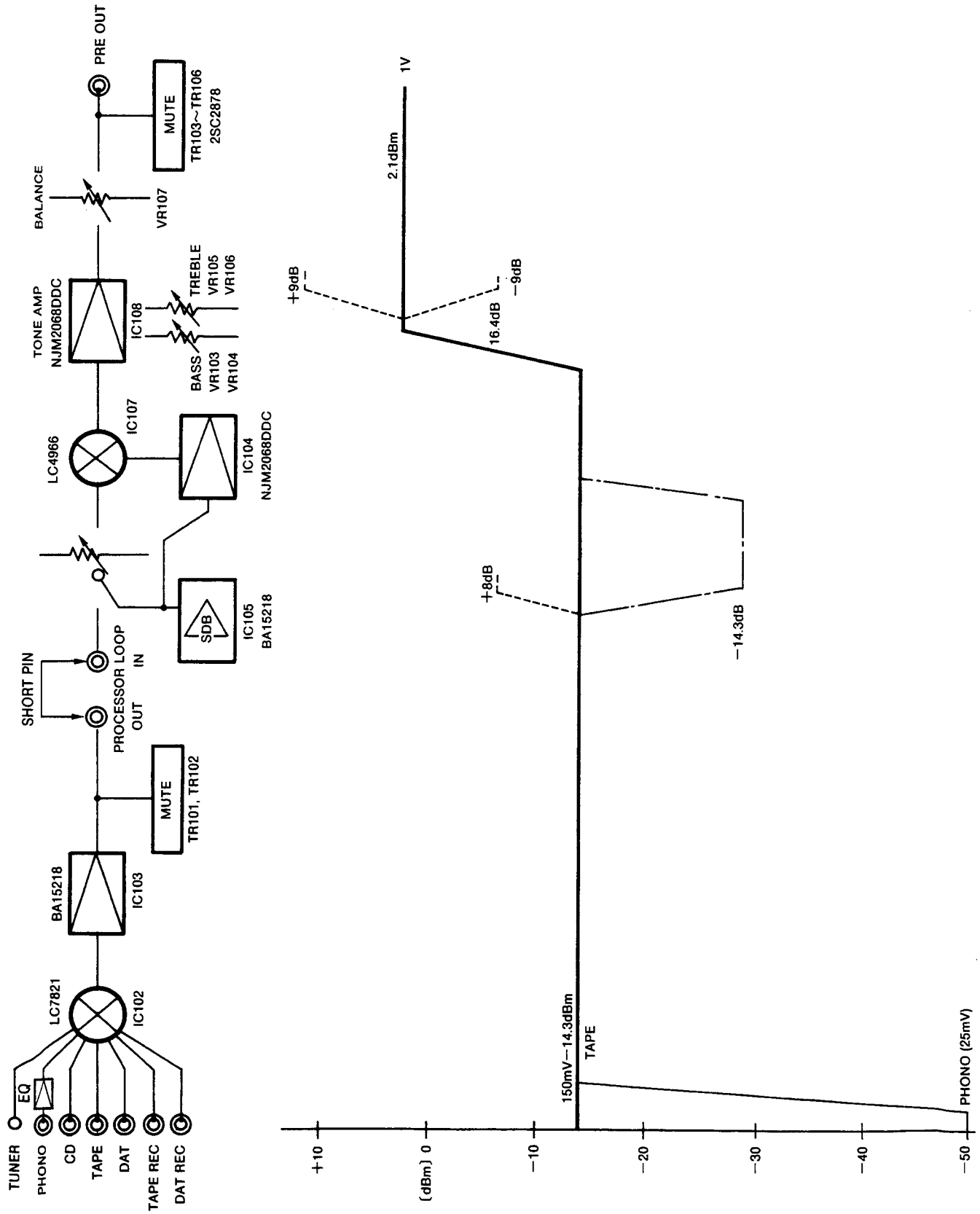
When Condensation Forms

The signals of the disc may not be read and this product will not operate properly. To remove the condensation, take out the disc and switch on the power. The condensation will evaporate within 1 hour and the set will operate normally.

This system consists of precision components using microprocessors. Avoid using it in places where there is much external noise. If used is such places, the system may not operate properly, but this is not a problem with the system. If the system does not operate properly, try performing the desired operation again.

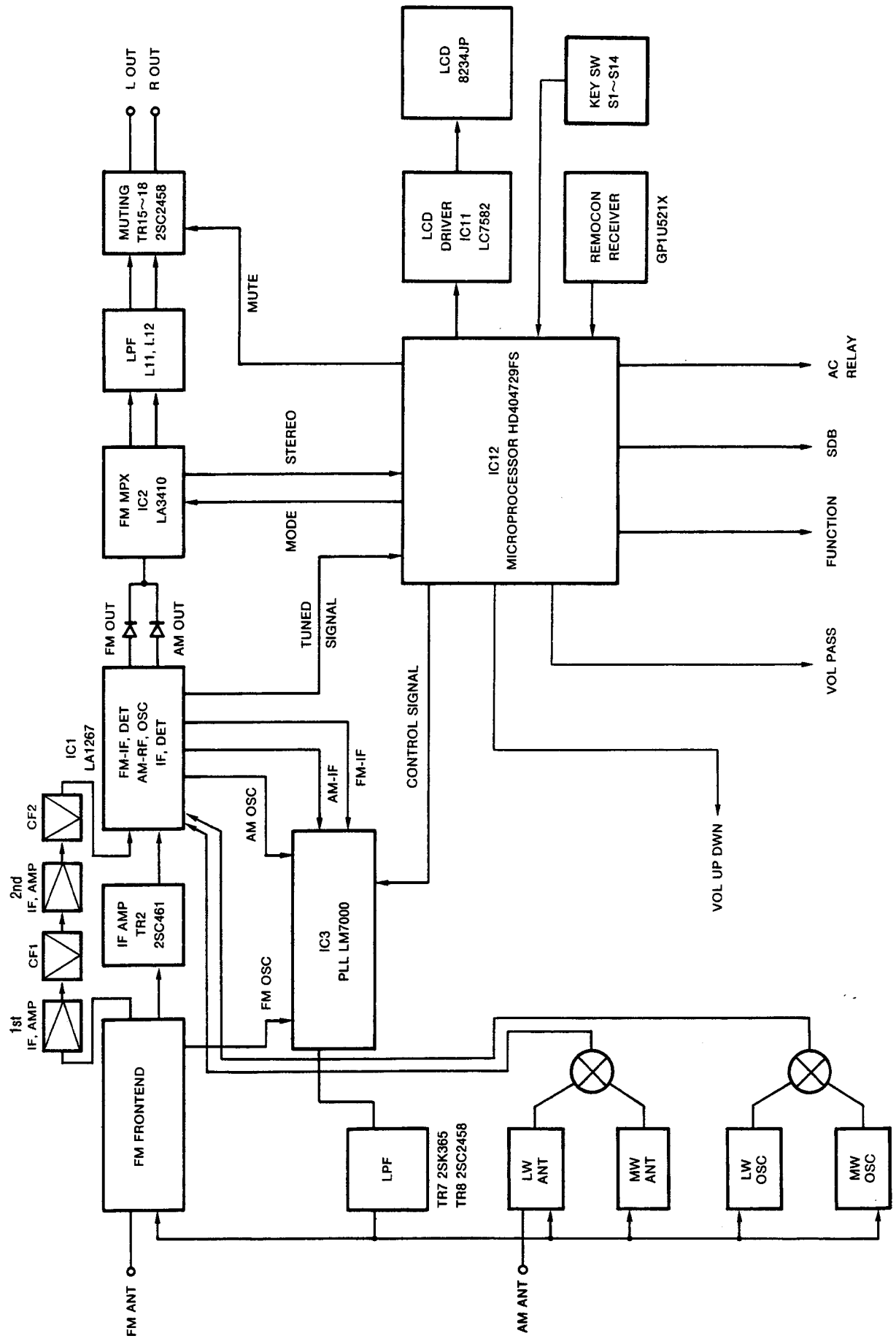
TUNER PRE SECTION

LEVEL DIAGRAM



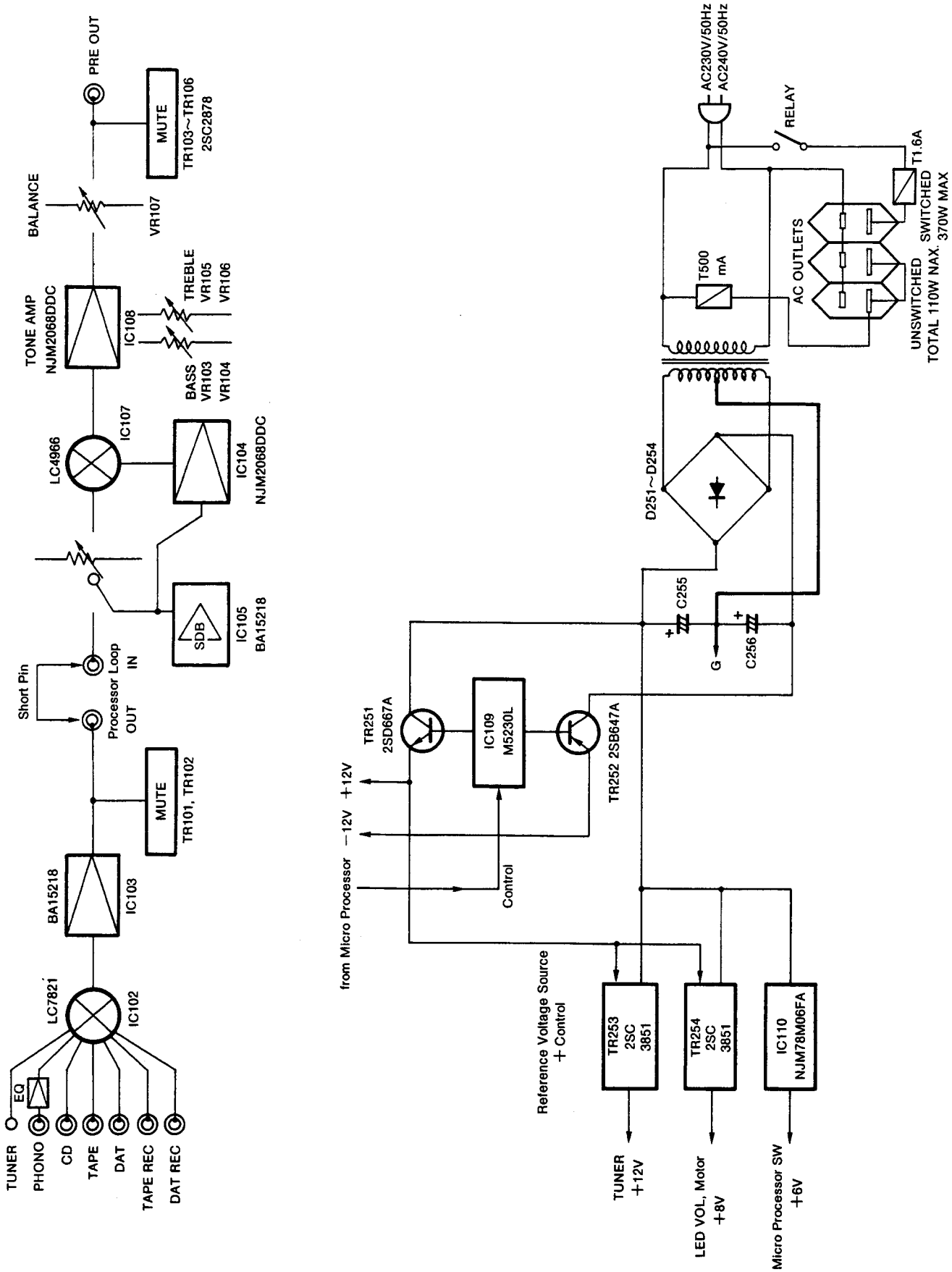
TUNER PRE SECTION

BLOCK DIAGRAM (TUNER SECTION)



TUNER PRE SECTION

(PRE AMPLIFIER SECTION)



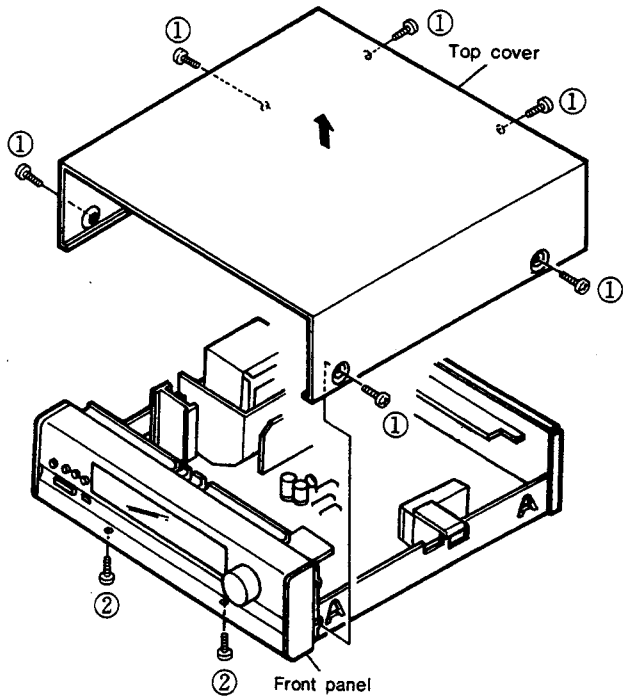
TUNER PRE SECTION

DISASSEMBLY PROCEDURES

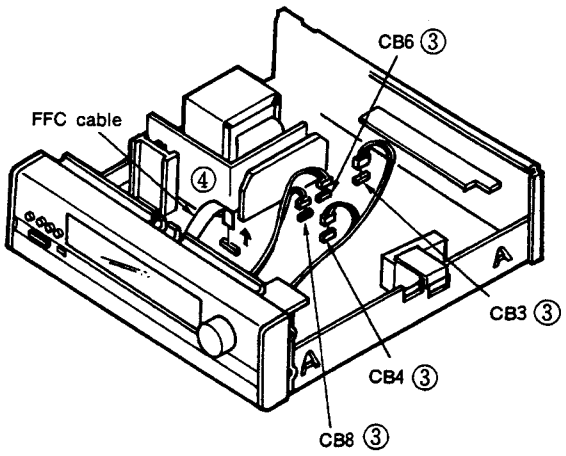
(Follow these procedures in reverse order to reassemble.)

1. Removing the top cover and front panel

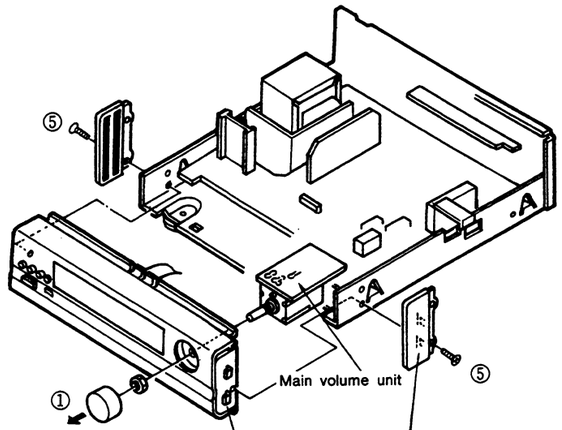
① Remove the 6 screws which fasten the top cover.
② Remove the 2 screws of the bottom side which fasten the front panel.

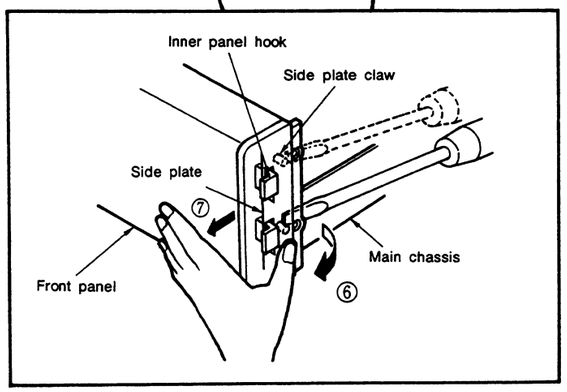


③ Disconnect connectors CB3, CB4, CB6, and CB8 which are attached to the main unit.
④ Remove the FFC cable, which is connected to the main unit, in the direction of the arrow.



⑤ Remove the 2 screws which fasten the side plate.
⑥ While disengaging in the direction of the arrow the tabs of the side plate and the holes of the main chassis (with a flat-bladed screwdriver),
⑦ Use your fingers to push out the hook of the inner panel from the side plate in the direction of the arrow.
Using the same method for the left side, remove the side plate.
Remove the front panel in the direction of the arrow.





2. Removing the printed wiring boards

MAIN VOLUME UNIT IU-2476-5

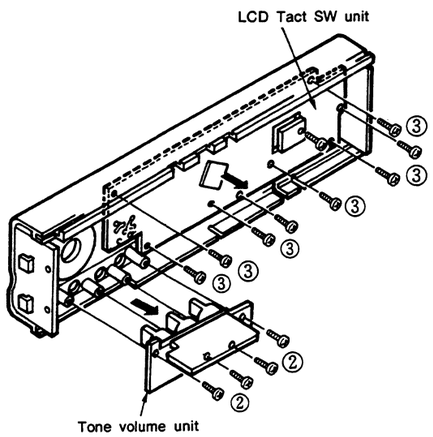
① Remove the volume control assembly in the direction of the arrow and remove the nuts attached to the main volume unit.

TONE VOLUME UNIT IU-2476-4

② Remove the 4 screws which fasten the tone volume unit (1U-2376-4) and remove the board in the direction of the arrow.

LCD TACT SWITCH UNIT IU-2476-3

③ Remove the 9 screws which fasten the LCD Tact switch unit and remove the board in the direction of the arrow.

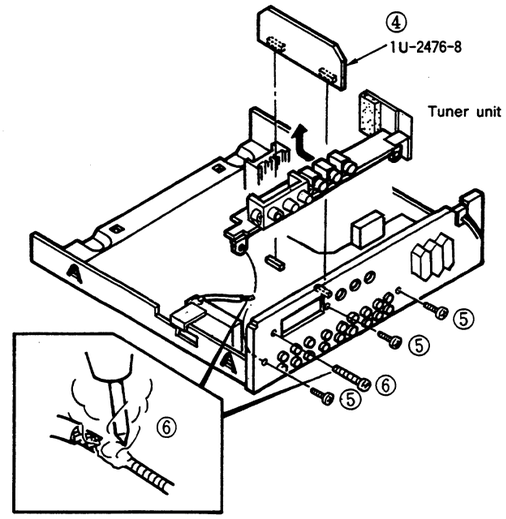


S.D.B. UNIT 1U-2476-8

④ Remove the S.D.B. unit in the direction of the arrow.

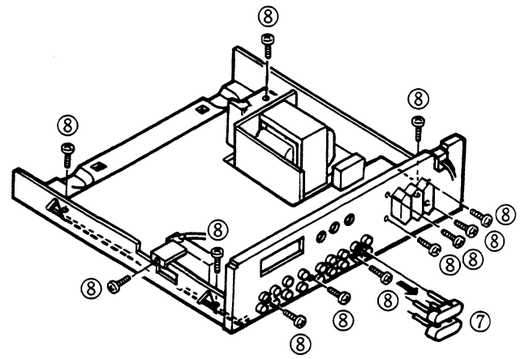
TUNER UNIT IU-2476-2

⑤ Remove the 3 screws which fasten the tuner unit.
⑥ Remove the solder from the shielded wire, then remove the screw.

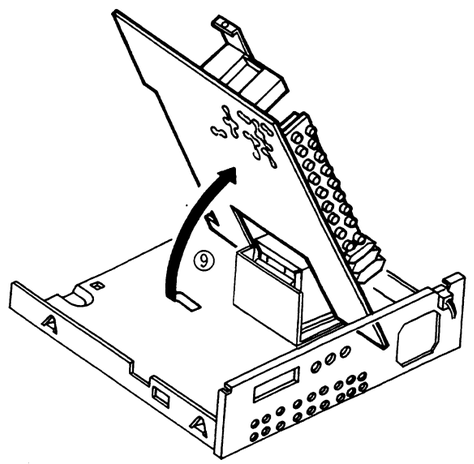


MAIN UNIT IU-2476-1

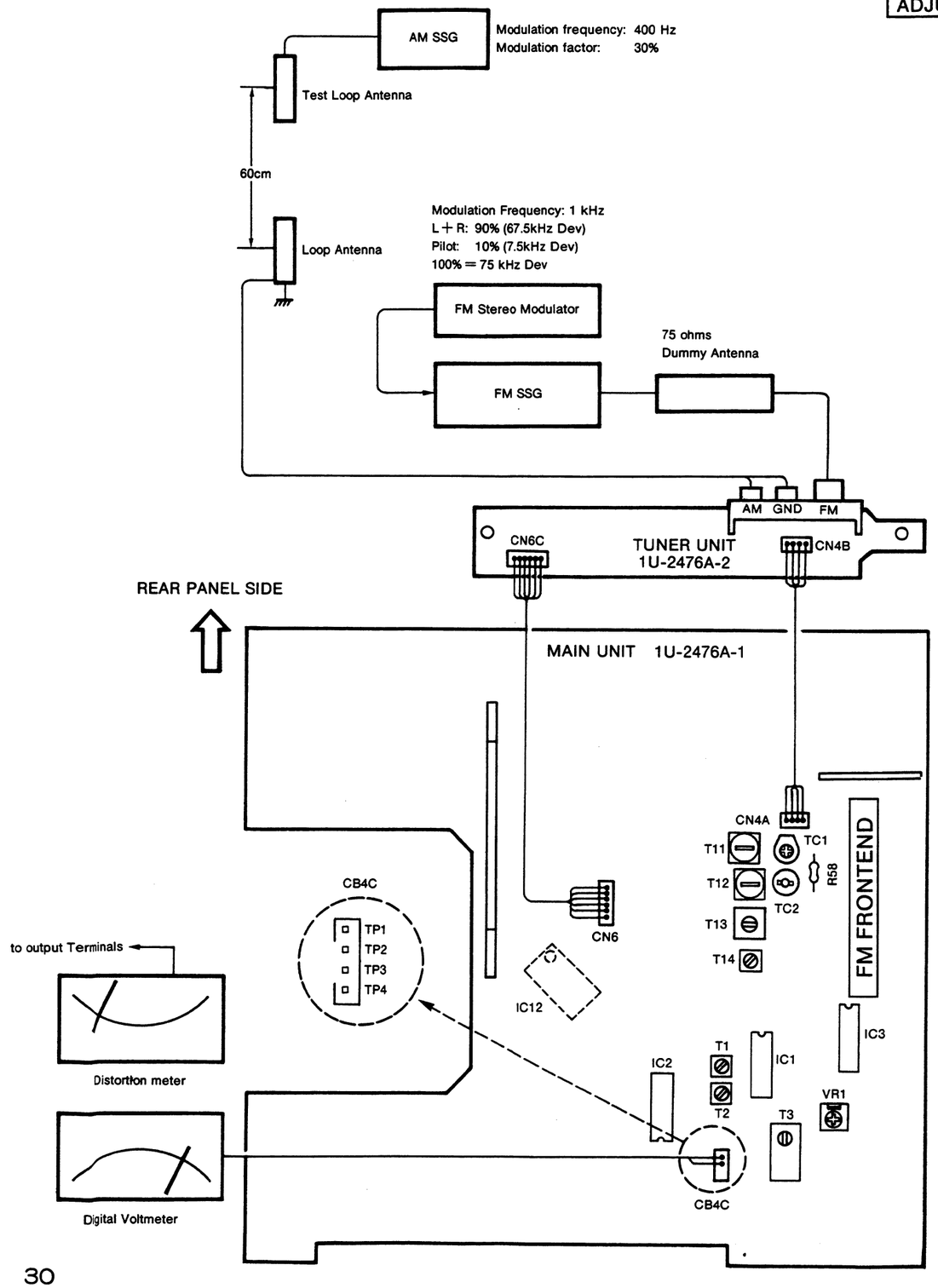
⑦ Remove the 2 shorting pins which are attached to the 6-pin pin jack.
⑧ Remove the 12 screws which are attached to the main unit.



⑨ Remove the main unit in the direction of the arrow.

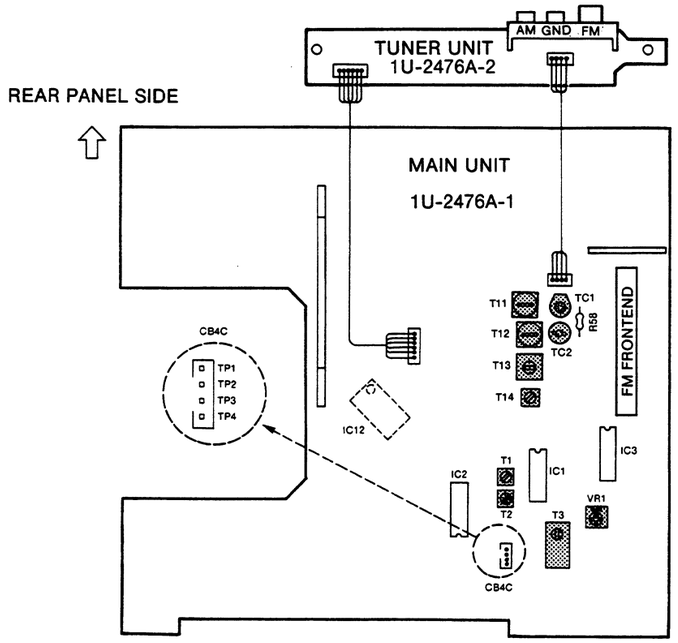


TUNER PRE SECTION



ADJUSTMENTS

1U-2476 TUNER UNIT ASS'Y (Component Side)



1. FM adjustment (BAND SELECTOR button: FM, STEREO / MONO MUTE button: AUTO)

Step	Adjustment item	Tuning point (Channel setting)	Input					Output		Adjustment location	Setting value	Notes
			Measuring instrument	Frequency	Input level	Modulation	Connection location	Measuring instrument	Connection location			
1	FM DC balance	98MHz	FM S.G.	98MHz	60dBμ	1kHz 75kHz DEV	FM antenna terminal	Digital Volt	TP.1, TP.2	T-1	0 ± 50 mV	Perform with monaural modulation signal
2	Distortion	〃	〃	〃	〃	〃	〃	Distortion factor meter	Output jack	T-2	Minimum distortion	〃
3	Repeat Steps 1 and 2.											
4	AUTO STOP level	98MHz	FM S.G.	98MHz	22dBμ	1kHz 75kHz DEV	FM antenna terminal	Check for the lighting of TUNED	Output jack	VR-1	Input level 22dBμ ± 4dB	(Level at which TUNED lights up) Level at which the output is provided

2. MW adjustment (BAND SELECT button: MW)

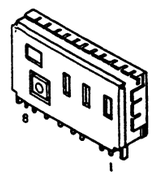
1	IF	Clear frequency (without a broadcast)	AM IF sweep	—	Level at which AGC is not applied	—	AM antenna terminal	Oscilloscope	⊕ TP.3 ⊖ TP.4	T-3	Waveform maximum and symmetry	
2	Band edge	522kHz	—	—	—	—	—	Digital voltmeter	⊕ R58 ⊖ G	T-14	1.2V	
		1611kHz								—	Approx. 8.2V	No place to adjust
3	Tracking	603kHz	AM S.G.	603kHz	Level at which AGC is not applied	400Hz 30%	Loop antenna	VTVM	Output terminal	T-12	Maximum output	
4	Tracking	1404kHz	〃	1404kHz	〃	〃	〃	〃	〃	TC-2	Maximum output	
5	Repeat Steps 3 and 4, and set the output to maximum.											

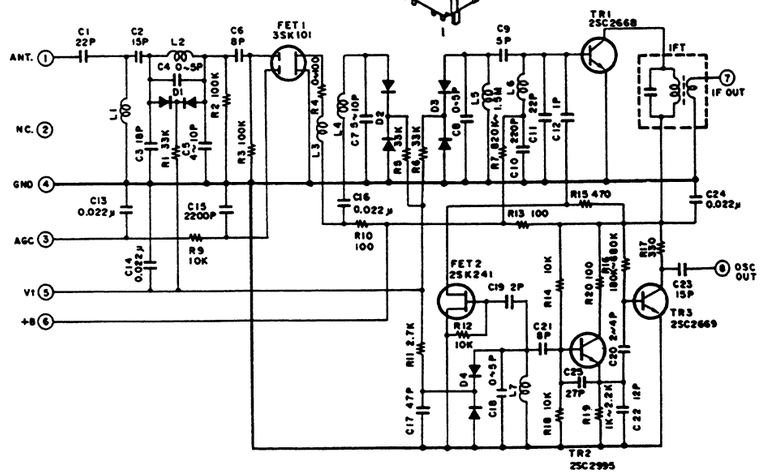
3. LW adjustment (BAND SELECT button: LW)

1	Band edge	153kHz	—	—	—	—	—	Digital voltmeter	⊕ TP.5 ⊖ TP.6	T-13	1.2V	
		279kHz								—	Approx. 7.0V	No place to adjust
2	Tracking	163kHz	AM S.G.	163kHz	Level at which AGC is not applied	400Hz 30%	Loop antenna	VTVM	Output terminal	T-11	Maximum output	
3	Tracking	270kHz	〃	270kHz	〃	〃	〃	〃	〃	TC-1	Maximum output	
4	Repeat Steps 2 and 3, and set the output to maximum.											

Front End
Part No.: 2160079005

No.	Name	No.	Name
1	ANT	5	Vt
2	ANT	6	+B
3	AGC	7	IF OUT
4	GND	8	OSC OUT

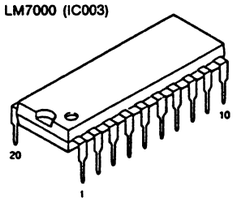


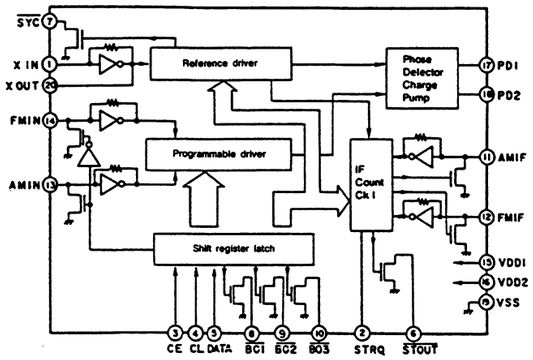


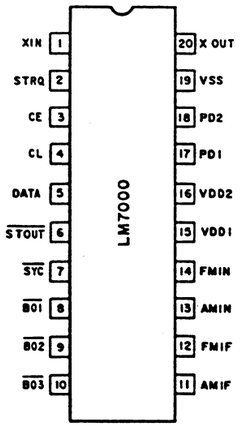
TUNER PRE SECTION

● IC's

LM7000 (IC003)



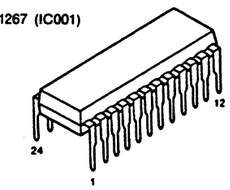


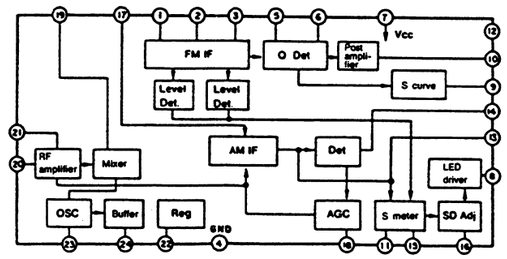


Pin Description

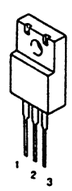
	SYC	: Clock (400 kHz) for the controller
	XIN, XOUT	: X'tal oscillator (7.2 MHz) with built-in feedback resistor
	FM IN, AM IN	: Local oscillator signal input
	CE, CL, DATA	: Data input
	B01, B02, B03	: Band data output. B01 can be set as the time base output (8 Hz).
	STRQ	: IF counter request input
	STOUT	: Auto research stop signal output
	VDD1, VDD2, VSS	: Power supply (VDD2 is a back-up power supply)
	AMIF, FMIF	: IF signal input
	PD1, PD2	: Charge pump output

LA1267 (IC001)

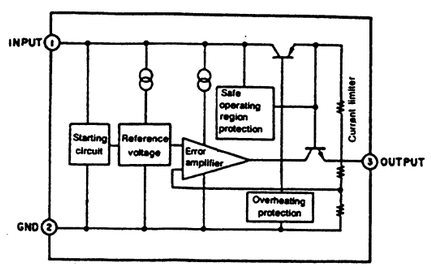




NJM78M06FA (IC110)

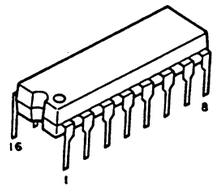


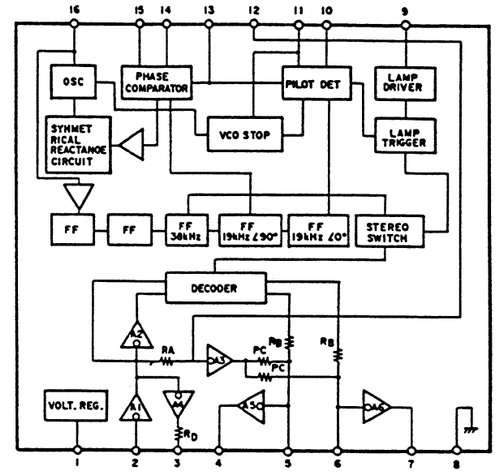
1: Input
2: GND
3: Output



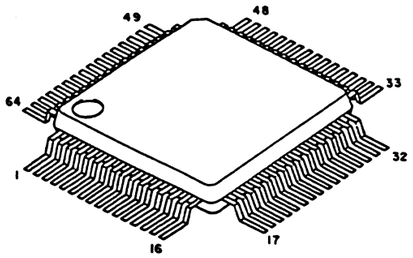
SEMICONDUCTORS

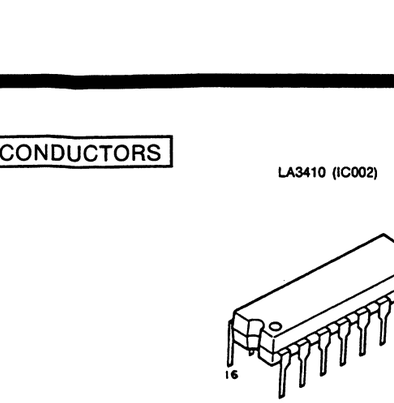
LA3410 (IC002)

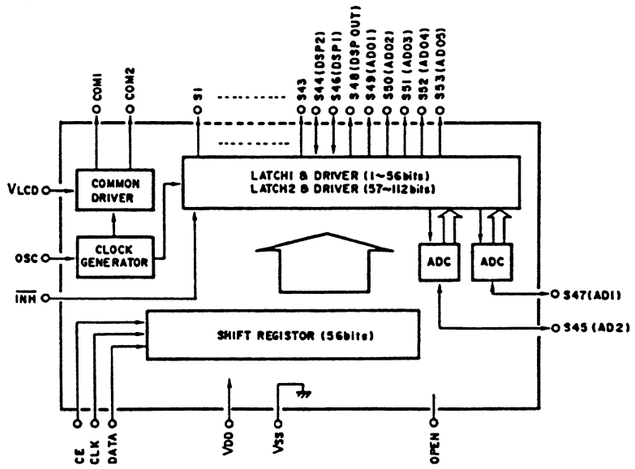




LC7582 (IC011)



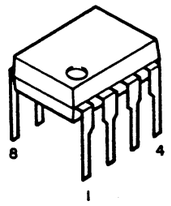


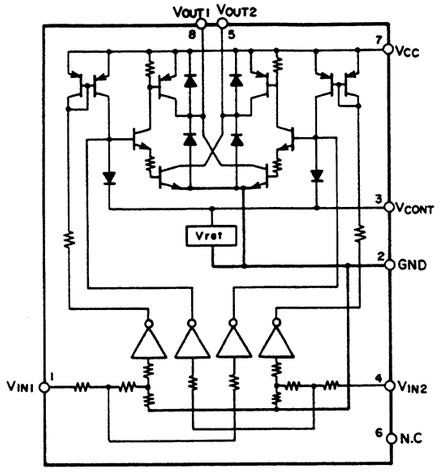


Pin Description

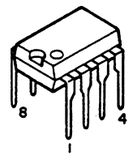
·	S1 through S43	: Segment output pins
·	S46 (DSP1), S44 (DSP2)	: Segment output or DSP input pins
·	S47 (AD1), S45 (AD2)	: Segment output or AD input pins
·	S48 (DSPOUT)	: Segment output of DSP output pin
·	S49 through S53 (AD01 through 5)	: Segment output or AD output pins
·	COM1, 2	: Common output pins (Only COM1 is used at time of 1/1 duty, and COM2 is set open)
·	V_{LCD}	: LCD bias voltage setting pin
·	OSC	: Oscillation pin
·	CE, CLK, DATA	: Input pin for serial data transfer
·	V_{SS}, V_{DD}	: Supply pins
·	$\overline{INH}$	: Display-off input pin. (Valid only with the output driver. This means that the transfer of serial data is possible while the display is off.)
·	OPEN	: No connection is made.

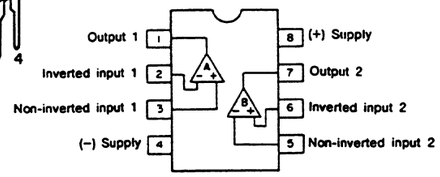
LB1639 (IC110)



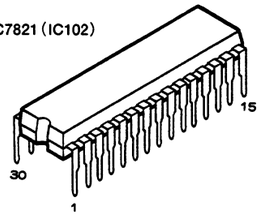


NJM2082DD (IC101)
NJM2068DDC (IC104, 108)
BA15218 (IC103, 105)

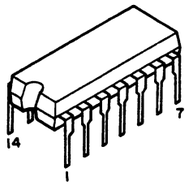


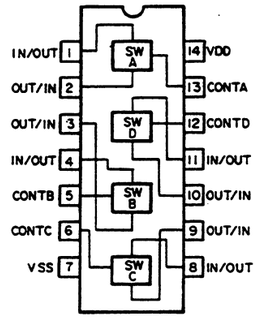


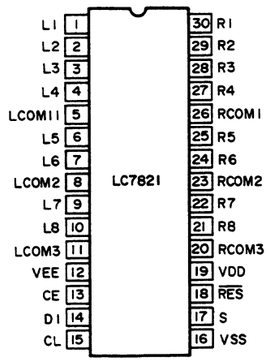
LC7821 (IC102)

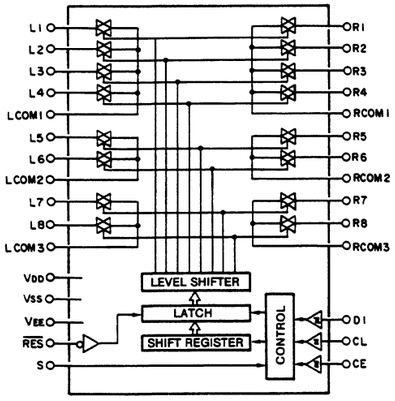


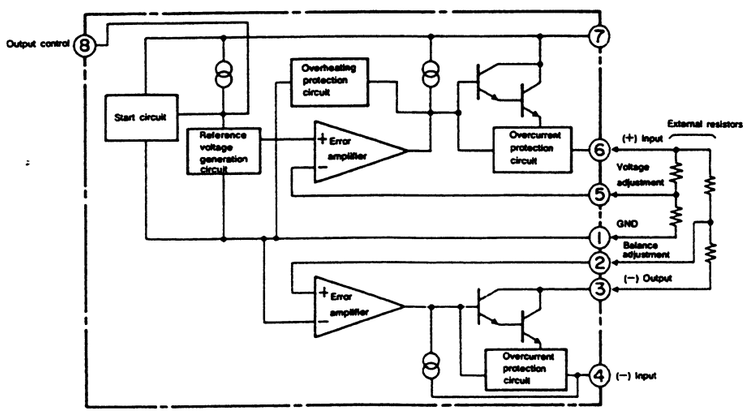
LC4966 (IC107)



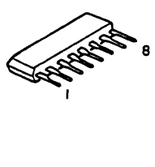


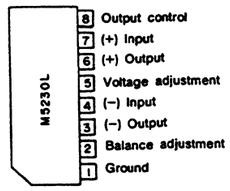






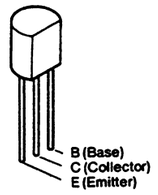
M5230L (IC114)



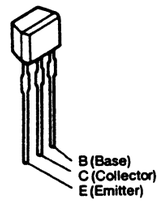


● Transistors

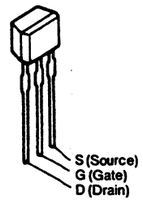
2SC461 (C)
2SC2878 (A/B)



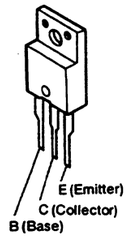
2SC2458 (BL)
2SA1048 (GR)



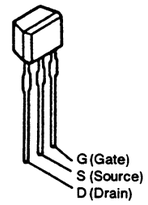
(FET)
2SK365 (BL/RG)



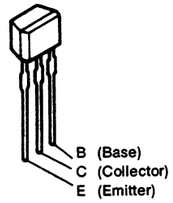
2SA1488(Y/GR)
2SC3851(Y/GR)



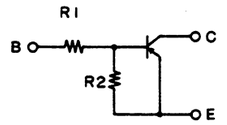
2SK161 (GR)



DTA144ES PAP Type
DTC144ES NPN Type

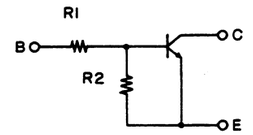


PNP Type



	R1	R2
DTA144ES	47k ohm	47k ohm

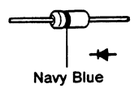
NPN Type



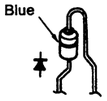
	R1	R2
DTC144ES	47k ohm	47k ohm

● Diodes (including LED)

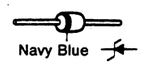
1SS270A



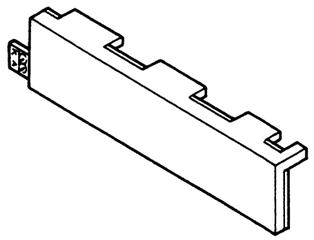
1SR35-200A



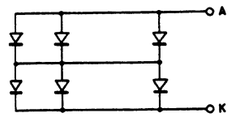
HZS3A-1
HZS6B-1
HZS9B-1



LED (SLF-351D)

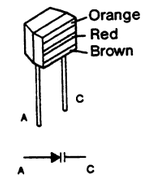


● Connection



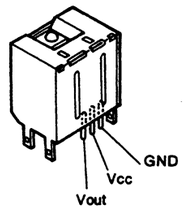
2 Series 22 Para = 44 Chip

SVC321SPA-D-2
(Varactor)

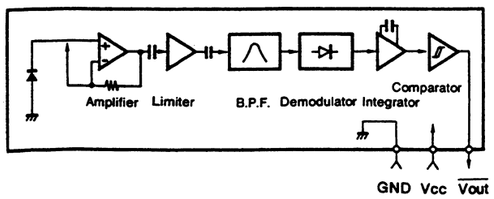


● Infrared Remote Control Sensor

GP10521X
(IC112)

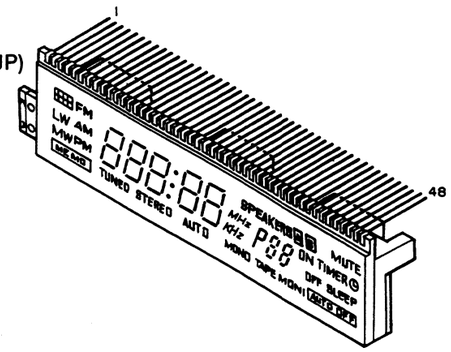


Structural Diagram

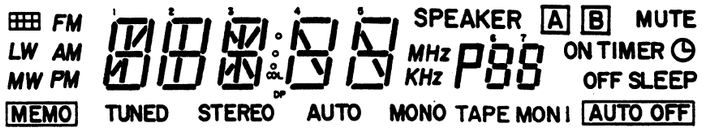


TUNER PRE SECTION

● LCD ASS'Y
Part No.: 3934142002 (8234JP)



Segment division



● LCD Pin Configuration Pin configuration definitions (segment side)

A/B	COM1	COM2
S 1	A11	A 4
S 2	A10	A 3
S 3	A 9	A 2
S 4	A 8	A 1
S 5	A 7	A 6
S 6	A 5	B 3
S 7	B 8	B 2
S 8	B 7	B 1
S 9	B 5	B 6
S10	B 9	B 4
S11	C12	C 4
S12	C11	C 3
S13	C 9	C 2
S14	C 8	C 1
S15	C 7	C 6
S16	C13	C10
S17	D 2	C 5
S18	I (STEREO)	D 1
S19	E 4	E 3
S20	E 7	E 2
S21	E 6	E 1
S22	E 9	E 8
S23	E 5	F 3
S24	F 7	F 2
S25	F 6	F 1
S26	F 4	F 8
S27	F 9	F 5
S28	G (MEMO)	H (TUNED)
S29	F (PM)	J (AUTO)
S30	D (AM)	E (MW)

A/B	COM1	COM2
S31	C (LW)	K (MONO)
S32	M (KHz)	N (MHz)
S33	A (□□)	L (DIRECT)
S34	G 4	G 3
S35	T (P)	O (SPEAKER)
S36	G 2	G 1
S37	G 7	G 6
S38	G 5	H 3
S39	Q (B)	P (A)
S40	H 7	H 2
S41	H 6	H 1
S42	S (OFF)	R (ON)
S43	H 4	H 5
S44	V (TIMER)	U (MUTE)
S45	W (□)	X (SLEEP)
S46	B (FM)	Y (AUTO OFF)
S47	—	—
S48	—	—
S49	—	—
S50	—	—
S51	—	—
S52	—	—
S53	—	—

B. Common side
COM1
COM2

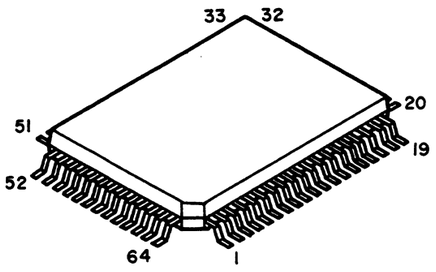
Pin Connection

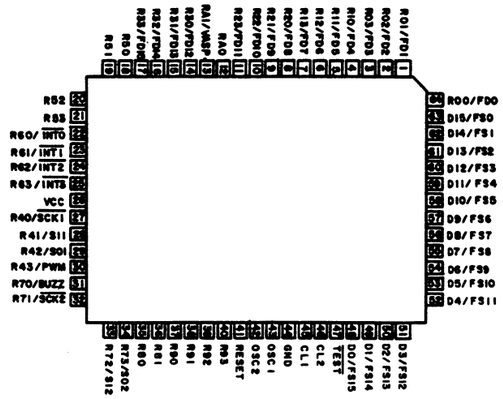
NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
COM1	—	COM	1l	1m	1g	1i	1j	1c	2g	2i	2c	2l	3l	3m	3h	3i	3j	3k	DP	STEREO	4d	4h	4b	4k
COM2	COM	—	1d	1e	1f	1a	1b	2e	2f	2a	2b	2d	3d	3e	3f	3a	3b	3g	3c	COL	4e	4f	4a	4g

NO	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
COM1	4c	5h	5b	5d	5k	MEMO	PM	AM	LW	KHZ		6d	P	6f	6g	6c	B	7g	7b	OFF	7d	TIMER		FM
COM2	5e	5f	5a	5g	5c	TUNED	AUTO	MW	MONO	MHZ	TAPE MON1	6e	SPEAKER	6a	6b	7e	SUB	7f	7a	ON	7c	MUTE	SLEEP	AUTO OFF

MICROPROCESSOR DOCUMENTATION

HD404729FS Part No.: 2621624106
(IC012)





1. Overview

The functions of this microcomputer are made up of the following four pillars.

a. Tuner Functions
- These functions perform the required control for the reception of FM and AM broadcasts.

b. Auto Functions
- Positioned at the heart of the system stereo, the auto functions perform serial communications with other components (such as the deck, CD, and amplifier) to provide overall control.
- These functions decode the signals from the remote control and send them to each component of the system.

c. Timer Functions
- Counts the clock of the 24-hour display.
- Provides 2 types of timer operation: once and sleep.

d. Display Function
- Outputs the control signal of the LCD.

Note 1: When buttons "ENTER/NEXT" and "MEMORY" of the wiring diagram are pressed simultaneously and the power cord is inserted into the power outlet, the frequencies used for the tracking adjustment will automatically be registered in the preset memory as indicated below.
Use this information for tuning and other procedures.

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
MW LW (kHz)	522	603	999	1,098	1,404	1,611	153	163	270	279
	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20
FM (MHz)	87.50	89.00	98.00	100.10	108.00	87.50	254	163	87.50	87.50
	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30
MW (kHz)	522	522	522	522	522	522	522	522	522	522

2. Receiving Band Table

Band	Receiving frequency	Local oscillator frequency	IF frequency	Frequency division ratio	Comparison frequency	Step frequency	Other
FM	87.50~108.00 MHz	98.20~118.70 MHz	10.7 MHz	1/2	25 kHz	100 kHz	STEREO
MW	522~1611 kHz	972~2061 kHz	450 kHz	—	9 kHz	9 kHz	
LW	153~279 kHz	603~729 kHz	450 kHz	—	1 kHz	1 kHz	

3. Signals sent to the LM7000 Programmable Divider

a. Signals to the programmable divider are sent from 3 sources: CE OUT, CLOCK OUT, and DATA OUT.

b. The programmable divider takes in DATA at CLOCK ⌐↑, when CE equals 1.

c. The data is a 24-bit serial signal which is taken in to the programmable divider from the LSB.
(At the AM setting, D_0 through D_3 are ignored, so that D_4 becomes the LSB.)

d. The data is made up of the number of frequency divisions data, the band data, and the comparison frequency data. (See diagram below.)

Number of frequency divisions data

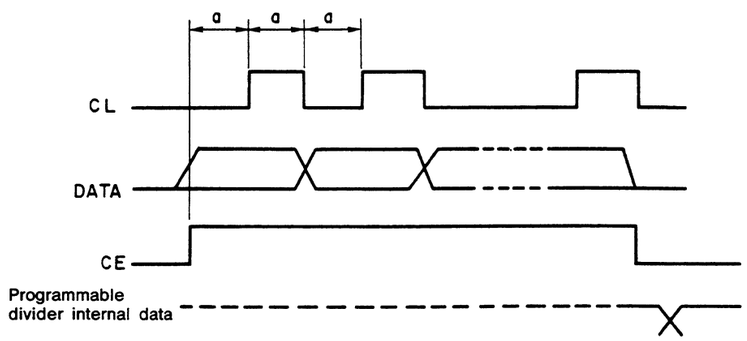
	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13
FM	1	0	0	0	1	1	1	1	1	1	1	0	0	0
AM	X	X	X	X	1	0	0	0	1	0	1	0	0	0

(T1) (T2) Band data Comparison frequency data

0	0	B0	B1	B2	0	R0	R1	R2	S
					(TB)				

Band	B0	B1	B2	B01	B02	B03	Comparison frequency	R0	R1	R2		S
FM	0	1	0	0	1	0	25kHz	0	1	0	→	1
AM (JAPAN) MW (EUROPE)	1	0	0	1	0	0	9kHz	1	0	1		0
LW	1	0	1	1	0	1	1kHz	1	1	0	→	0
AM (USA)	1	0	0	1	0	0	10kHz	1	0	→	→	0

e. Timing for sending
a = 2.5 μsec



Description of Key and Selection Switch Inputs

No.	Function Name	Function
1	TAPE MONI	Pressing this button selects whether the tape monitor is on or off. *When the tape monitor is on, TAPE MONI OUT1 is high. *When the tape monitor is off, TAPE MONI OUT1 is low.
2	FREQ UP	*In the tuner mode, this function shifts the reception frequency upwards in steps of 1. After the button has been depressed for 0.5 seconds or longer, the frequency changes continuously, then from the point at which the button is released the tuner enters the auto tuning mode. Pressing the button again will set the step operation.
3	FREQ. DOWN	*In the tuner mode, this function shifts the reception frequency downwards in steps of 1. After the button has been depressed for 0.5 seconds or longer, the frequency changes continuously, then from the point at which the button is released the tuner enters the auto tuning mode. Pressing the button again will set the step operation.
4	BAND	This function operates cyclicly to command switching to the FM, AM (MW), and LW reception modes.
5	MODE	During FM reception this function commands switching of the reception mode to the stereo/mono auto mode and the forced mono mode.
6	SDB	Pressing this button selects whether SDB is on or off. With SDB on, high level is output. With SDB off, low level is output.
7	CLEAR	This function commands a clearing of the timer setting contents.
8	TIMER	When you would like the timer to operate only once at the set time, this button causes a shift to this setting mode. A one-course setting is possible.
9	ENTER/NEXT	This function is used to advance to the next step during the clock setting or the setting of the timer.
10	POWER	This is the RELAY OUT button which switches on and off the power of the other system components.
11	STAND BY	Pressing this button selects whether the timer operation is on or off. When timer operation is desired, pressing this button causes the standby mark in the LCD to light.
12	MEMORY	*During the tuner mode, this function causes a shift to the mode in which the station currently being received is registered in the preset memory. The "MEMORY" indication will flash and registration will be achieved when the P1−P10 and P+10 buttons are pressed.
13	FUNC	This function operates cyclicly to switch the function of the amplifier.
14	DISPLAY	This function switches the time display and the mode display.

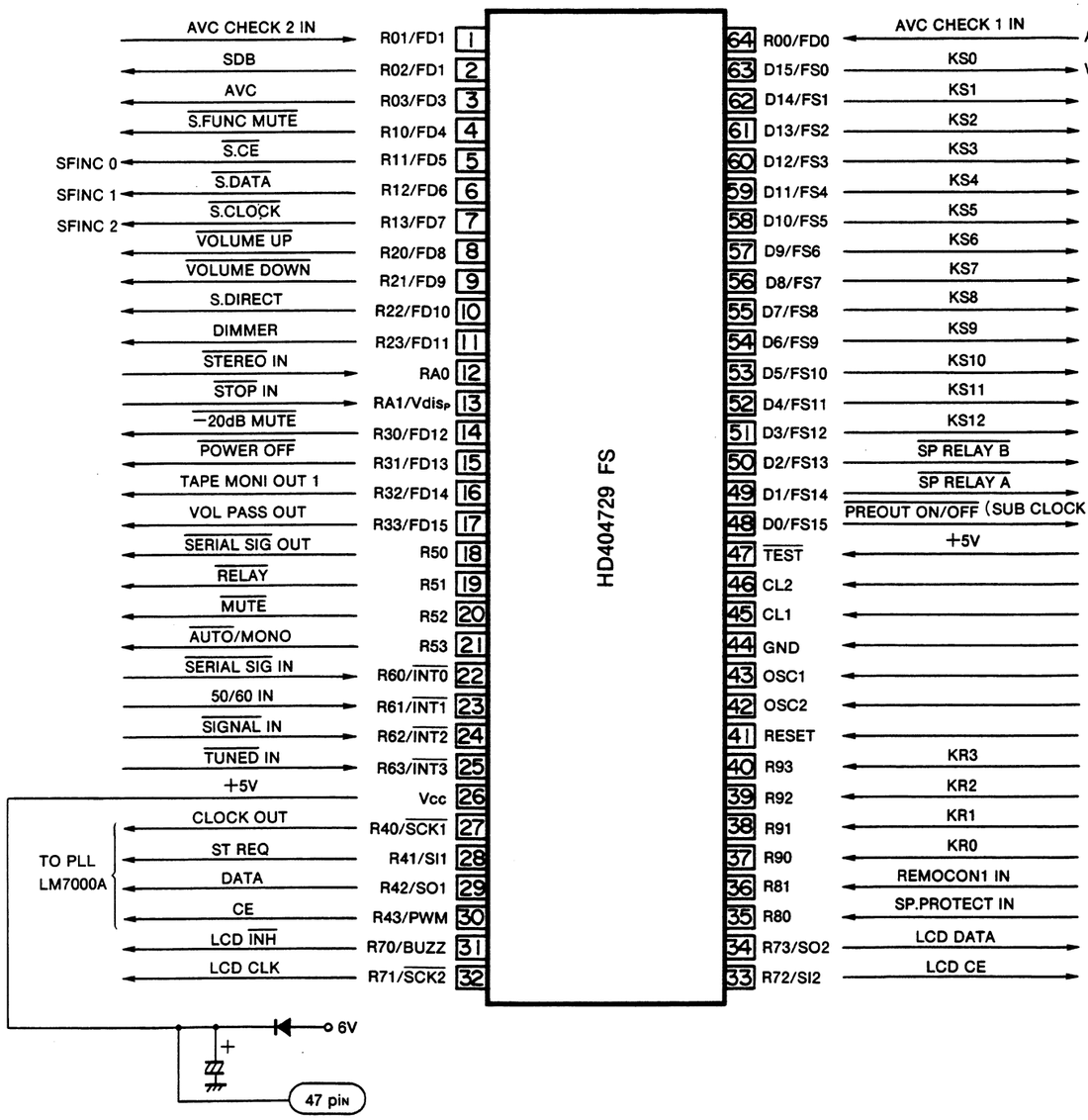
TUNER PRE SECTION

Pin Description (HD404729FS---)

Pin No.	Port Name	Function Name	Function
1	R01/FD1	AVC CHECK IN2	AVC on/off signal input pin.
2	R02/FD2	SDB	SDB control output.
3	R03/FD3	AVC	Outputs a high level at time of FUNCTION AVC.
4	R10/FD4	S.FUNC.MUTE OUT	FUNCTION MUTE output pin.
5	R11/FD5	S.CE	CE output for LC7821-L.
6	R12/FD6	S.DATA	Data output for LC7821-L.
7	R13/FD7	S.CLOCK	Clock output for LC7821-L.
8	R20/FD8	VOLUME UP OUT	Output for motor drive up.
9	R21/FD9	VOLUME DOWN OUT	Output for motor drive down.
10	R22/FD10	S.DIRECT	Direct mode switching output.
11	R23/FD11	DIMMER OUT	Dimmer mode switching output.
12	RA0	STEREO IN	STEREO indication signal input.
13	RA1/Vdisp	STOP IN	PTOP signal input.
14	R30/FD12	20DB MUTE OUT	20 dB muting output pin.
15	R31/FD13	POWER OFF OUT	Power on/off control output.
16	R32/FD14	MONI OUT1	High level output when tape monitor is on.
17	R33/FD15	VOL PASS OUT	Volume pass output control pin.
18	R50	SERIAL SIG OUT	Denon bus out pin.
19	R51	RELAY OUT	Provides a toggle operation in sync with the POWER button to control the AC relay.
20	R52	MUTE OUT	Muting output pin of the tuner audio output.
21	R53	AUTO/MONO OUT	Auto/Mono switching output pin.
22	R60/INT0	SERIAL SIG IN	Denon bus input pin.
23	R61/INT1	50/60 IN	50Hz/60 Hz pulse input pin.
24	R62/INT2	SIGNAL IN	Tuner signal input pin.
25	R63/INT3	TUNED IN	Tuning signal input pin.
26	VCC		5 V
27	R40/SCK1	PLL CLOCK OUT	Clock output pin for PLL.
28	R41/SI1	PLL ST REQ OUT	Request output pin for PLL.
29	R42/SO1	PLL DATA OUT	Data output pin for PLL.
30	R43/PWM	PLL CE OUT	CE output pin for PLL.
31	R70/BUZZ	LCD INH OUT	INH output for LCD (LC7582).
32	R71/SCK2	LCD CLOCK OUT	Clock output for LCD (LC7582).
33	R72/SI2	LCD CE OUT	CE output for LCD (LC7582).
34	R73/SO2	LCD DATA OUT	Data output for LCD (LC7582).
35	R80	PROTECT IN	Speaker protect input pin.
36	R81	REMOCON1 IN	Remote control 1 input pin.
37	R90	KRO	Key return 0.
38	R91	KR1	Key return 1.
39	R92	KR2	Key return 2.
40	R93	KR3	Key return 3.
41	$\overline{\text{RESET}}$		Reset input pin.
42	OSC2		4 MHz Cell lock.
43	OSC1		4 MHz Cell lock.
44	GND		Ground
45	CL1		32 kHz xtal
46	CL2		32 kHz xtal
47	TEST		5 V
48	D0/FS15	PRE OUT ON/OFF	Pre out control output.
49	D1/FS14	SP RELAY A OUT	Speaker A control output.
50	D2/FS13	SP RELAY B OUT	Speaker B control output.
51	D3/FS12	KS12	Key strobe 12.
52	D4/FS11	KS11	Key strobe 11.
53	D5/FS10	KS10	Key strobe 10.
54	D6/FS9	KS9	Key strobe 9.
55	D7/FS8	KS8	Key strobe 8.
56	D8/FS7	KS7	Key strobe 7.
57	D9/FS6	KS6	Key strobe 6.
58	D10/FS5	KS5	Key strobe 5.
59	D11/FS4	KS4	Key strobe 4.
60	D12/FS3	KS3	Key strobe 3.
61	D13/FS2	KS2	Key strobe 2.
62	D14/FS1	KS1	Key strobe 1.
63	D15/FS0	KS0	Key strobe 0.
64	R00/FD0	AVC CHECK IN1	AVC on/off signal input pin.

MICROPROCESSOR PERIPHERAL WIRING DIAGRAM

TUNER PRE SECTION



KEY & SWITCH MATRIX DEFINE

	KS0	KS1	KS2	KS3	KS4	KS5	KS6	KS7	KS8	KS9	KS10	KS11	KS12
KR0	1	5	9	PRESET SCAN	FREQ UP	PRESET UP	CLOCK/ DISPLAY	POWER	HITACHI	USA	LD	FUNC	
KR1	2	6	10 (0)	AM (MW)	FREQ DOWN	PRESET DOWN	ONCE (TIMER)	STAND-BY	SP. REMOCON	EUROPE	EX	S. DIRECT	MEMORY
KR2	3	7	+10 (AM/PM)	FM	BAND	SDB	ENTER/ NEXT	DIMMER	CD— RETRY	FREQ	EX— PHONO	SP—A	−20dB MUTE
KR3	4	8	TAPE MONI	LW	MODE	CLEAR	SLEEP		OEM	ADJUST	X'TAL	SP—B	PRE OUT ON/OFF

KEY, SWITCH MATRIX

(1) KEY
KS0 − KR0 = 1
KS0 − KR1 = 2
KS0 − KR2 = 3
KS0 − KR3 = 4

KS1 − KR0 = 5
KS1 − KR1 = 6
KS1 − KR2 = 7
KS1 − KR3 = 8

KS2 − KR0 = 9
KS2 − KR1 = 10 (0)
KS2 − KR2 = +10 (AM/PM)
* KS2 − KR3 = TAPE MONITOR

KS3 − KR0 = PRESET SCAN
KS3 − KR1 = AM (MW)
KS3 − KR2 = FM
KS3 − KR3 = LW

KS4 − KR0 = FREQ UP
KS4 − KR1 = FREQ DOWN
KS4 − KR2 = BAND
KS4 − KR3 = MODE

KS5 − KR0 = PRESET UP
KS5 − KR1 = PRESET DOWN
* KS5 − KR2 = SDB
KS5 − KR3 = CLEAR

KS6 − KR0 = CLOCK/DISPLAY
KS6 − KR1 = ONCE (TIMER)
* KS6 − KR2 = ENTER/NEXT
KS6 − KR3 = SLEEP

KS7 − KR0 = POWER
KS7 − KR1 = STANDBY
KS7 − KR2 = DIMMER

(2) SW
* KS8 − KR0 = HITACHI
KS8 − KR1 = SP−REMOCON
KS8 − KR2 = CD−RETRY
KS8 − KR3 = OEM

KS9 − KR0 = USA
KS9 − KR1 = EUROPE
KS9 − KR2 = FREQ
KS9 − KR3 = ADJUST

KS10 − KR0 = LD
KS10 − KR1 = EX
* KS10 − KR2 = EX−PHONO
KS10 − KR3 = X'TAL

(3) KEY
KS11 − KR0 = FUNCTION
KS11 − KR1 = S. DIRECT
KS11 − KR2 = SP−A
KS11 − KR3 = SP−B

KS12 − KR1 = MEMORY
KS12 − KR2 = −20dB MUTE
KS12 − KR3 = PRE OUT ON/OFF

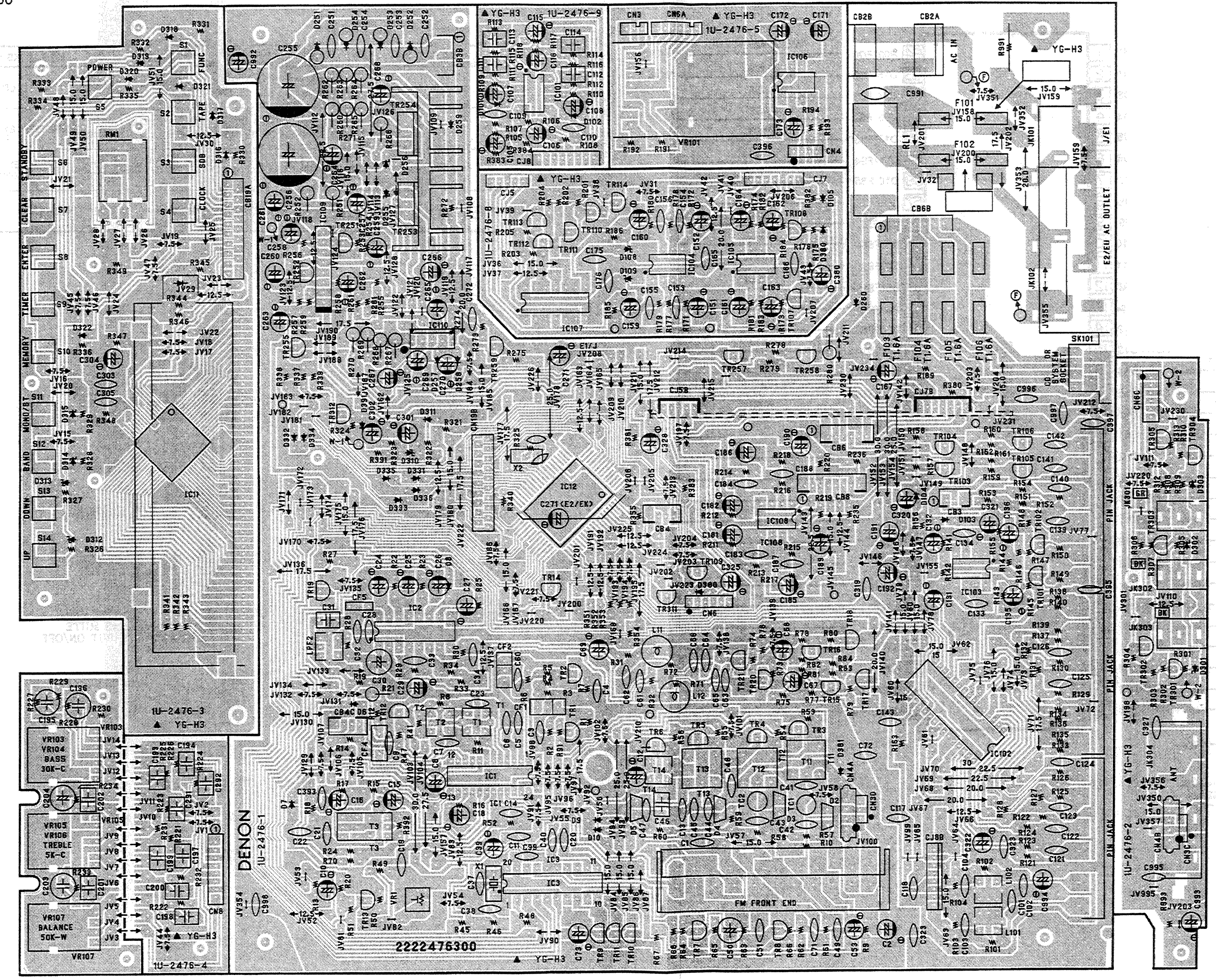
TUNER PRE SECTION

PRINTED WIRING BOARD

1 2 3 4 5 6 7 8

1U-2476 UTP-250
UNIT ASS'Y
Component Side

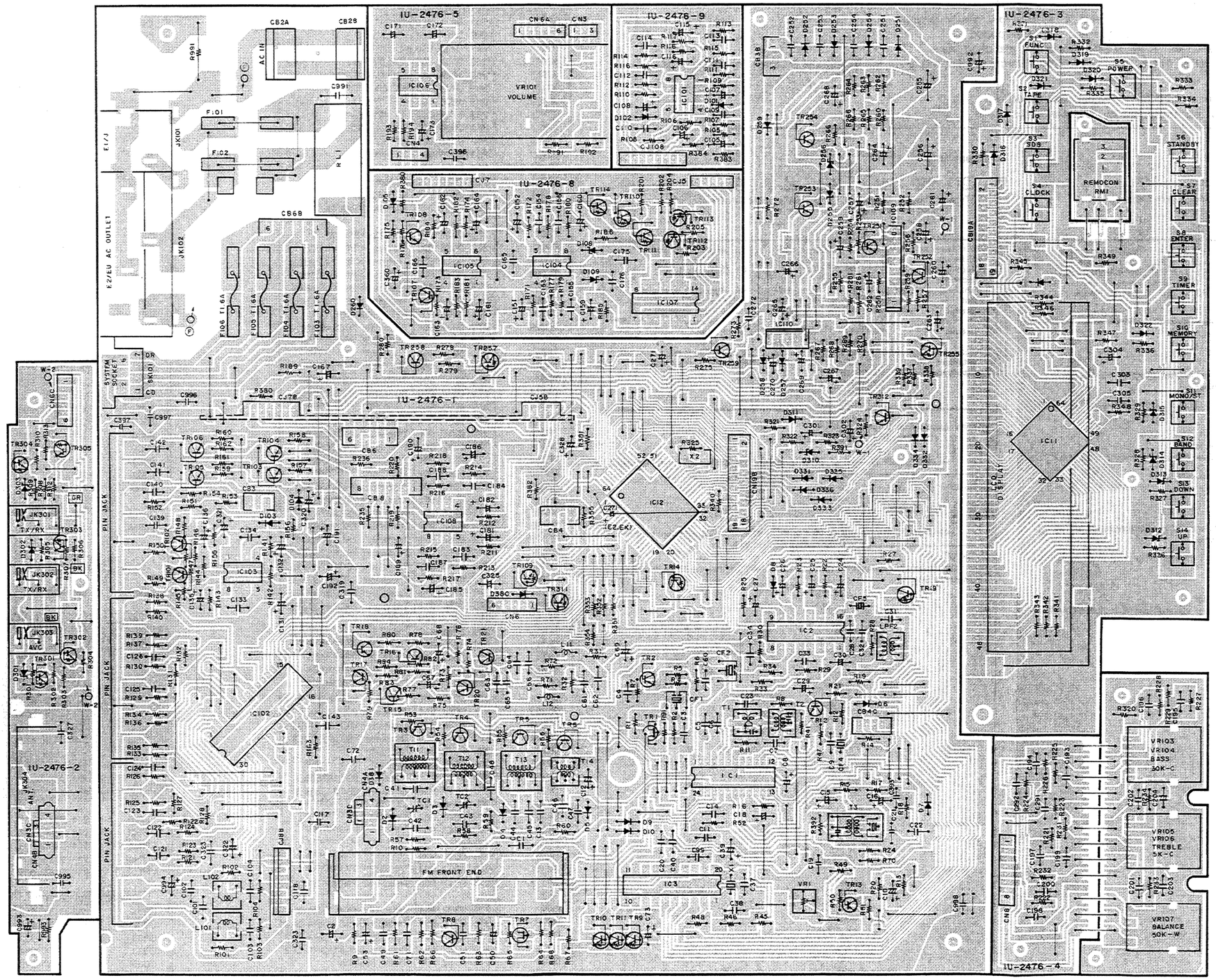
A B C D E


POWER
FUNC
TAPE
SDB
CLOCK
STANDBY
CLEAR
ENTER
TIMER
MEMORY
MONO/ST
BAND
DOWN
UP
RM1
IC1
1U-2476-3
YG-H3
VR103
VR104
BASS
30K-C
VR105
VR106
TREBLE
5K-C
VR107
BALANCE
50K-W
1U-2476-4
DENON
1U-2476-1
2222476300
1U-2476-9
1U-2476-5
1U-2476-8
IC107
IC12
C271(E2/EK)
IC2
IC3
FM FRONT END
IC102
AC IN
F101
F102
F103 T1.6A
F104 T1.6A
F105 T1.6A
F106 T1.6A
J/E1
E2/EU AC OUTLET
SK101
CD OR SYSTEM SOCKET
PIN JACK
ANT
1U-2476-2

10

TUNER PRE SECTION

Pattern Side



TUNER PRE SECTION

NOTE ON PARTS LIST
- Part indicated with the mark "◉" are not always in stock and possibly to take a long period of time for suppling, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W. Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:
Parts marked with this symbol ⚠ ▩ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

• Resistors

Ex.: RN 14K 2E 182 G FR
(Type / Shape and performance / Power / Resistance / Allowable error / Others)

RD : Carbon Film RC : Composition RS : Metallic oxide Film RW : Winding RN : Metal film RK : Metal mixture	2B : 1/8W 2E : 1/4W 2H : 1/2W 3A : 1W 3D : 2W 3F : 3W 3H : 5W	F : ±1% G : ±2% J : ±5% K : ±10% M : ±20%	P : Pulse-resistant type NL : Low noise type NB : Non-burning type FR : Fuse-resistor F : Lead wire forming

※Resistance

1 8 2 ⇨ 1800 ohm = 1.8 kohm
(1, 8: 2-digit effective number; 2: Indicates number of zeros after effective number)

- Units: ohm

1 R 2 ⇨ 1.2 ohm
(1, R: 2-digit effective number, decimal point indicated by R; 2: 1-digit effective number.)

- Units: ohm

※Capacity (electrolyte only)

2 2 R ⇨ 2200 μF
(2, 2: 2-digit effective number; R: Indicates number of zeros after effective number.)

- Units: μF

2 R 2 ⇨ 2.2 μF
(2, R: 2-digit effective number, decimal point indicated by R; 2: 1-digit effective number.)

- Units: μF

• Capacitors

Ex.: CE 04W 1H 2R2 M BP
(Type / Shape and performance / Dielectric strength / Capacity / Allowable error / Others)

CE : Aluminum foil electrolyte CA : Aluminum solid electrolyte CS : Tantalum electrolyte CQ : Film CK : Ceramic CC : Ceramic CP : Oil CM : Mica CF : Metallized CH : Metallized	0J : 6.3V 1A : 10V 1C : 16V 1E : 25V 1V : 35V 1H : 50V 2A : 100V 2B : 125V 2C : 160V 2D : 200V 2E : 250V 2H : 500V 2J : 630V	F : ±1% G : ±2% J : ±5% K : ±10% M : ±20% Z : +80% −20% P : +100% −0% C : ±0.25pF D : ±0.5pF = : Others	HS : High stability type BP : Non-polar type HR : Ripple-resistant type DL : For charge and discharge HF : For assuring high frequency U : UL part C : CSA part W : UL-CSA type F : Lead wire forming

※Capacity (except electrolyte)

2 R 2 ⇨ 2200pF = 2200 μF = 0.002 μF
(2, R: 2-digit effective number; 2: (More than 2) Indicates number of zeros after effective number.)

- Units: μF

2 2 1 ⇨ 220pF
(2, 2: 2-digit effective number; 1: (0 or 1) Indicates number of zeros after effective number.)

- Units: pF
- When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

1U-2476A P.W.B UNIT ASSY PARTS LIST

Ref. No.	Part No.	Part Name	Remarks
SEMICONDUCTORS GROUP			
IC001	263 0421 002	IC LA1267	
IC002	263 0584 004	IC LA3410	
IC003	262 0703 002	IC LM7000	
IC011	263 0533 000	IC LC7582	
IC012	262 1624 106	IC HD404729FS---	μ-com
IC101	263 0743 007	IC NJM2082DD	
IC102	262 1808 003	IC LC7821N	
IC103	263 0712 009	IC :RC4558P	
IC104	263 0609 002	IC NJM2068DDC	
IC105	263 0712 009	IC :RC4558P	
IC106	263 0476 002	IC LB1639	
IC107	263 0359 006	IC LC4966	
IC108	263 0609 002	IC NJM2068DDC	
IC109	263 0646 007	IC M5230L	
IC110	263 0586 002	IC NJM78M06FA	Regulator +6V
TR001	275 0051 909	FET 2SK161(GR)	
TR002	273 0025 926	Transister 2SC461(C)	
TR003	273 0317 906	Transister 2SC2458(BL)	
TR004	273 0317 906	Transister 2SC2458(BL)	
TR005	273 0317 906	Transister 2SC2458(BL)	
TR006	273 0317 906	Transister 2SC2458(BL)	
TR007	275 0053 907	FET 2SK365(BL/GR)	
TR008	273 0317 906	Transister 2SC2458(BL)	
TR009	269 0093 904	Transister DTA144ES (47k-47k)	
TR010	269 0093 904	Transister DTA144ES (47k-47k)	
TR011	269 0093 904	Transister DTA144ES (47k-47k)	
TR012	273 0317 906	Transister 2SC2458(BL)	
TR013	273 0317 906	Transister 2SC2458(BL)	
TR014	269 0093 904	Transister DTA144ES (47k-47k)	
TR015	273 0317 906	Transister 2SC2458(BL)	
TR016	273 0317 906	Transister 2SC2458(BL)	
TR017	273 0317 906	Transister 2SC2458(BL)	
TR018	273 0317 906	Transister 2SC2458(BL)	
TR019	269 0040 902	Transister DTC144ES (47k-47k)	
TR020	273 0317 906	Transister 2SC2458(BL)	
TR021	273 0317 906	Transister 2SC2458(BL)	
TR101	273 0253 918	Transister 2SC2878(A/B)	
TR102	273 0253 918	Transister 2SC2878(A/B)	
TR103	273 0253 918	Transister 2SC2878(A/B)	
TR104	273 0253 918	Transister 2SC2878(A/B)	
TR105	273 0253 918	Transister 2SC2878(A/B)	
TR106	273 0253 918	Transister 2SC2878(A/B)	
TR107	273 0253 918	Transister 2SC2878(A/B)	
TR108	273 0253 918	Transister 2SC2878(A/B)	
TR109	269 0093 904	Transister DTA144ES (47k-47k)	
TR110	269 0040 902	Transister DTC144ES (47k-47k)	
TR111	269 0040 902	Transister DTC144ES (47k-47k)	
TR112	269 0093 904	Transister DTA144ES (47k-47k)	
TR113	269 0093 904	Transister DTA144ES (47k-47k)	
TR114	269 0040 902	Transister DTC144ES (47k-47k)	
TR251	274 0060 900	Transister 2SD667A(C)	
TR252	272 0053 908	Transister 2SB647A(C)	
TR253	273 0338 008	Transister 2SC3851(Y)/(G)	
TR254	273 0338 008	Transister 2SC3851(Y)/(G)	
TR255	269 0040 902	Transister DTC144ES (47k-47k)	
TR257	269 0040 902	Transister DTC144ES (47k-47k)	
TR258	273 0198 918	Transister 2SC1815(BL)	
TR259	273 0317 906	Transister 2SC2458(BL)	
TR301	269 0040 902	Transister DTC144ES (47k-47k)	
TR302	269 0040 902	Transister DTC144ES (47k-47k)	
TR303	269 0040 902	Transister DTC144ES (47k-47k)	
TR304	269 0040 902	Transister DTC144ES (47k-47k)	
TR305	269 0040 902	Transister DTC144ES (47k-47k)	
TR311	269 0093 904	Transister DTA144ES (47k-47k)	
TR312	273 0317 906	Transister 2SC2458(BL)	
D002	276 0302 004	Varactor SVC321SPA-D-2	
D003	276 0302 004	Varactor SVC321SPA-D-2	
D004	276 0302 004	Varactor SVC321SPA-D-2	
D005	276 0302 004	Varactor SVC321SPA-D-2	
D006	276 0432 903	Diode 1SS270A	
D007	276 0432 903	Diode 1SS270A	
D008	276 0432 903	Diode 1SS270A	
D009	276 0432 903	Diode 1SS270A	
D010	276 0432 903	Diode 1SS270A	
D103	276 0432 903	Diode 1SS270A	
D104	276 0432 903	Diode 1SS270A	
D105	276 0531 901	Diode 1SS254	
D251	276 0553 905	Diode 1SR35-200A	
D252	276 0553 905	Diode 1SR35-200A	
D253	276 0553 905	Diode 1SR35-200A	
D254	276 0553 905	Diode 1SR35-200A	
D256	276 0468 906	Zener Diode HZS9B-1	9 V
D257	276 0432 903	Diode 1SS270A	
D258	276 0432 903	Diode 1SS270A	
D259	276 0432 903	Diode 1SS270A	
D260	276 0432 903	Diode 1SS270A	
D301	276 0462 902	Zener Diode HZS6B-1	6 V
D302	276 0462 902	Zener Diode HZS6B-1	6 V
D303	276 0462 902	Zener Diode HZS6B-1	6 V
D310	276 0452 909	Zener Diode HZS3A-1	3 V
D312	276 0462 902	Zener Diode HZS6B-1	6 V
D313	276 0462 902	Zener Diode HZS6B-1	6 V
D314	276 0462 902	Zener Diode HZS6B-1	6 V
D315	276 0462 902	Zener Diode HZS6B-1	6 V
D316	276 0432 903	Diode 1SS270A	
D317	276 0432 903	Diode 1SS270A	
D318	276 0432 903	Diode 1SS270A	
D319	276 0432 903	Diode 1SS270A	
D320	276 0432 903	Diode 1SS270A	
D321	276 0432 903	Diode 1SS270A	
D322	276 0432 903	Diode 1SS270A	
D331	276 0432 903	Diode 1SS270A	
D333	276 0432 903	Diode 1SS270A	
D335	276 0432 903	Diode 1SS270A	
D380	276 0432 903	Diode 1SS270A	
D381	276 0432 903	Diode 1SS270A	
D391	276 0432 903	Diode 1SS270A	
D399	276 0370 007	Diode 1SS106	
JV125	276 0432 903	Diode 1SS270A	
JV205	276 0432 903	Diode 1SS270A	
	393 9470 009	LED	LED
	393 4142 002	LCD 8234 JP	LCD
RM001	499 0172 002	GP1U521X	Remocon Receiver
RESISTORS GROUP (Not Included Carbon Film ±5% 1/4W Type. Refer to the Scematic Diagram for those Parts.)			
⚠R021	241 2376 964	Carbon Film 47 ohm 1/4W(NB)	RD14B2E470JNBS
⚠R260	241 2387 940	Carbon Film 4.7 ohm 1W (NB)	RD14B2E4R7JNBS
⚠R262	244 2055 938	Metal Oxide 6.8 ohm 1W (NB)	RS14B3A6R8JNBS(S)
⚠R263	244 2055 938	Metal Oxide 6.8 ohm 1W (NB)	RS14B3A6R8JNBS(S)
⚠R264	244 2055 938	Metal Oxide 6.8 ohm 1W (NB)	RS14B3A6R8JNBS(S)
⚠R265	244 2055 938	Metal Oxide 6.8 ohm 1W (NB)	RS14B3A6R8JNBS(S)
⚠R266	244 2061 016	Metal Oxide 150 ohm 1W (NB)	RS14B3A151JNBS
⚠R267	244 2052 928	Metal Oxide 47 ohm 1W (NB)	RS14B3A470JNBS(S)
⚠R268	244 2055 938	Metal Oxide 6.8 ohm 1W (NB)	RS14B3A6R8JNBS(S)
⚠R269	244 2055 938	Metal Oxide 6.8 ohm 1W (NB)	RS14B3A6R8JNBS(S)
⚠R270	244 2044 979	Metal Oxide 5.6 ohm 1W (NB)	RS14B3A5R6JNBS(S)
⚠R271	244 2050 933	Metal Oxide 180 ohm 1W (NB)	RS14B3A181JNBS(S)
⚠R280	244 2050 920	Metal Oxide 120 ohm 1W (NB)	RS14B3A121JNBS(S)
VR001	211 6087 915	Semi Fixed Resistor 22k ohm	V06PB223
VR101	211 0749 107	Variable Resistor 100k ohm	
VR103	211 0769 006	Variable Resistor 30k ohm	Bass
VR105	211 0768 007	Variable Resistor 5 k ohm	Treble
VR107	211 9105 001	Variable Resistor 50 k ohm	
CAPACITORS GROUP			
C001	253 1181 917	Ceramic 0.022μF/50 V	CK45F1H223Z
C002	254 4254 909	Electrolytic 10μF/16 V	CE04W1C100M
C003	253 1181 904	Ceramic 0.01μF/50 V	CK45F1H103Z
C004	253 1181 904	Ceramic 0.01μF/50 V	CK45F1H103Z
C005	253 1181 917	Ceramic 0.022μF/50 V	CK45F1H223Z
C006	253 1181 917	Ceramic 0.022μF/50 V	CK45F1H223Z

TUNER PRE SECTION

Ref. No.	Part No.	Part Name	Remarks
C007	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C008	254 4260 964	Electrolytic 3.3µF/50 V	CE04W1H3R3M
C009	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C010	254 4260 948	Electrolytic 1µF/50 V	CE04W1H010M
C011	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C012	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C013	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C014	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C015	254 4260 977	Electrolytic 4.7µF/50 V	CE04W1H4R7M
C016	254 4260 964	Electrolytic 3.3µF/50 V	CE04W1H3R3M
C018	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C019	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C020	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C021	253 9030 976	BC Ceramic 0.015µF/25 V	CK45=1E153K
C022	253 9031 920	BC Ceramic 0.1µF/25 V	CK45=1E104K
C023	253 4536 941	Ceramic 15 pF/50 V	CC45SL1H150J
C024	254 4260 964	Electrolytic 3.3µF/50 V	CE04W1H3R3M
C025	254 4260 935	Electrolytic 0.47µF/50 V	CE04W1HR47M
C026	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C027	254 4260 948	Electrolytic 1µF/50 V	CE04W1H010M
C028	253 1182 903	Ceramic 0.047µF/50 V	CK45==473Z
C029	254 4254 938	Electrolytic 47µF/16 V	CE04W1C470M
C030	254 3053 907	Electrolytic 10µF/16 V (Bi Pola)	CE04D1C100MBP
C031	255 4201 984	Plastic Film 560pF/50 V	CQ93P1H561J
C032	253 1179 961	Ceramic 330pF/50 V	CK45B1H331K
C033	253 1179 961	Ceramic 330pF/50 V	CK45B1H331K
C034	253 1179 961	Ceramic 330pF/50 V	CK45B1H331K
C037	253 4536 941	Ceramic 15 pF/50 V	CC45SL1H150J
C038	253 4536 941	Ceramic 15 pF/50 V	CC45SL1H150J
C039	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C040	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C041	253 4432 906	Ceramic 68 pF/50 V	CC45SL1H680J
C042	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C043	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C044	253 4444 907	Ceramic 220 pF/50 V	CC45SL1H221J
C045	253 4441 900	Ceramic 160 pF/50 V	CC45SL1H161J
C046	255 4201 942	Plastic Film 390pF/50 V	CQ93P1H391J
C047	253 4536 941	Ceramic 15 pF/50 V	CC45SL1H150J
C048	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C049	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C050	254 3056 917	Electrolytic 1µF/50 V (Bi Pola)	CE04D1H010MBP
C051	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C053	254 4254 938	Electrolytic 47µF/16 V	CE04W1C470M
C060	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C061	253 9031 962	BC Ceramic 2700pF/25 V	CK45=1E272K
C062	253 9031 962	BC Ceramic 2700pF/25 V	CK45=1E272K
C063	253 9031 959	BC Ceramic 1800pF/25 V	CK45=1E182K
C064	253 9031 959	BC Ceramic 1800pF/25 V	CK45=1E182K
C065	253 9031 946	BC Ceramic 1200pF/25 V	CK45=1E122K
C066	253 9031 946	BC Ceramic 1200pF/25 V	CK45=1E122K
C067	254 4260 935	Electrolytic 0.47µF/50 V	CE04W1HR47M
C068	254 4260 935	Electrolytic 0.47µF/50 V	CE04W1HR47M
C069	254 4254 938	Electrolytic 47µF/16 V	CE04W1C470M
C071	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C072	254 4260 948	Electrolytic 1µF/50 V	CE04W1H010M
C073	254 4254 938	Electrolytic 47µF/16 V	CE04W1C470M
C075	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C099	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C103	253 4443 908	Ceramic 200 pF/50 V	CC45SL1H201J
C104	253 4443 908	Ceramic 200 pF/50 V	CC45SL1H201J
C105	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C106	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C107	254 4250 929	Electrolytic 100µF/6.3 V	CE04W0J101M
C108	254 4250 929	Electrolytic 100µF/6.3 V	CE04W0J101M
C111	255 1213 904	Plastic Film 0.012µF/50 V	CQ93M1H123J
C112	255 1213 904	Plastic Film 0.012µF/50 V	CQ93M1H123J
C113	255 1206 908	Plastic Film 0.0033µF/50 V	CQ93M1H332J
C114	255 1206 908	Plastic Film 0.0033µF/50 V	CQ93M1H332J
C115	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C116	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C117	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C118	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C121	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C122	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J

Ref. No.	Part No.	Part Name	Remarks
C123	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C124	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C125	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C126	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C131	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C132	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C133	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C134	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C135	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C136	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C139	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C140	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C141	253 9030 947	BC Ceramic 4700 pF/25 V	CK45=1E472K
C142	253 9030 947	BC Ceramic 4700 pF/25 V	CK45=1E472K
C143	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C151	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C152	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C153	253 1179 961	Ceramic 330pF/50 V	CK45B1H331K
C154	253 1179 961	Ceramic 330pF/50 V	CK45B1H331K
C155	253 4537 911	Ceramic 30 pF/50 V	CC45SL1H300J
C156	253 4537 911	Ceramic 30 pF/50 V	CC45SL1H300J
C159	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C160	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C161	254 4260 935	Electrolytic 0.47µF/50 V	CE04W1HR47M
C162	254 4260 935	Electrolytic 0.47µF/50 V	CE04W1HR47M
C163	254 4260 922	Electrolytic 0.33µF/50 V	CE04W1HR33M
C164	254 4260 922	Electrolytic 0.33µF/50 V	CE04W1HR33M
C165	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C166	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C167	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C171	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C172	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C173	254 4252 927	Electrolytic 47µF/10 V	CE04W1A470M
C175	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C176	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
C181	255 1265 978	Plastic Film 0.022µF/50 V	CQ93M1H223J(B)
C182	255 1265 978	Plastic Film 0.022µF/50 V	CQ93M1H223J(B)
C183	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C184	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C185	254 4260 948	Electrolytic 1µF/50 V	CE04W1H010M
C186	254 4260 948	Electrolytic 1µF/50 V	CE04W1H010M
C187	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C188	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C189	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C190	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C191	254 4256 907	Electrolytic 10µF/25 V	CE04W1E100M
C192	254 4256 907	Electrolytic 10µF/25 V	CE04W1E100M
C193	256 1034 995	Metalized 0.15µF/50 V	CF93A1H154J
C194	256 1034 995	Metalized 0.15µF/50 V	CF93A1H154J
C195	254 3056 917	Electrolytic 1µF/50 V (Bi Pola)	CE04D1H010MBP
C196	254 3056 917	Electrolytic 1µF/50 V (Bi Pola)	CE04D1H010MBP
C197	256 1034 953	Metalized 0.068µF/50 V	CF93A1H683J
C198	256 1034 953	Metalized 0.068µF/50 V	CF93A1H683J
C199	255 1203 901	Plastic Film 0.0018µF/50 V	CQ93M1H182J
C200	255 1203 901	Plastic Film 0.0018µF/50 V	CQ93M1H182J
C201	255 1213 904	Plastic Film 0.012µF/50 V	CQ93M1H123J
C202	255 1213 904	Plastic Film 0.012µF/50 V	CQ93M1H123J
C203	254 3056 904	Electrolytic 0.47µF/50 V (Bi Pola)	CE04D1HR47MBP
C204	254 3056 904	Electrolytic 0.47µF/50 V (Bi Pola)	CE04D1HR47MBP
C251	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C252	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C253	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C254	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C255	257 4259 700	Electrolytic 2200µF/35V	CE04W1V222MC
C256	254 4258 785	Electrolytic 470µF/35V	CE04W1V471MC
C257	254 4258 918	Electrolytic 10µF/35 V	CE04W1V100M
C258	254 4256 907	Electrolytic 10µF/25 V	CE04W1E100M
C259	254 4281 901	Electrolytic 1µF/50 V	CE04W1H010M(KME)
C260	254 4256 907	Electrolytic 10µF/25 V	CE04W1E100M
C261	254 4258 918	Electrolytic 10µF/35 V	CE04W1V100M
C262	254 4256 907	Electrolytic 10µF/25 V	CE04W1E100M
C263	254 4256 907	Electrolytic 10µF/25 V	CE04W1E100M
C264	254 4260 980	Electrolytic 10µF/50 V	CE04W1H100M
C265	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M

Ref. No.	Part No.	Part Name	Remarks
C266	254 4274 947	Electrolytic 10µF/16 V	CE04W1C100M(KME)
C267	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C268	254 4274 947	Electrolytic 10µF/16 V	CE04W1C100M(KME)
C269	254 4256 907	Electrolytic 10µF/25 V	CE04W1E100M
C270	254 4254 909	Electrolytic 10µF/16 V	CE04W1C100M
C271	254 4252 066	Electrolytic 470µF/10 V	CE04W1A471M
C272	253 9031 920	BC Ceramic 0.1µF/25 V	CK45=1E104K
C291	255 1200 904	Plastic Film 0.001µF/50 V	CQ93M1H102J
C292	255 1200 904	Plastic Film 0.001µF/50 V	CQ93M1H102J
C301	254 4252 927	Electrolytic 47µF/10 V	CE04W1A470M
C302	254 4252 927	Electrolytic 47µF/10 V	CE04W1A470M
C303	253 1181 904	Ceramic 0.01µF/50 V	CK45F1H103Z
C304	254 4302 958	Electrolytic 47µF/10 V	CE04W1A470M(SRE)
C305	253 1180 905	Ceramic 680pF/50 V	CK45B1H681K
C319	253 1180 921	Ceramic 1000pF/50 V	CK45B1H102K
C320	254 4260 922	Electrolytic 0.33µF/50 V	CE04W1HR33M
C321	254 4260 977	Electrolytic 4.7µF/50 V	CE04W1H4R7M
C322	254 4260 948	Electrolytic 1µF/50 V	CE04W1H010M
C323	253 1180 921	Ceramic 1000pF/50 V	CK45B1H102K
C325	254 4327 904	Electrolytic 1000µF/6.3V	CE04W0J102M(SMG)
C327	253 4538 949	Ceramic 100pF/50 V	CC45SL1H101J
C328	254 4260 948	Electrolytic 1µF/50 V	CE04W1H010M
C331	253 4536 983	Ceramic 22 pF/50 V	CC45SL1H220J
C332	253 4536 983	Ceramic 22 pF/50 V	CC45SL1H220J
C380	254 4256 907	Electrolytic 47µF/10 V	CE04W1A470M
C393	253 1181 917	Ceramic 0.022µF/50 V	CK45F1H223Z
△C991	253 8014 702	Ceramic 0.01µF/400V(AC)	CK45F2GAC103MC
C992	254 4260 948	Electrolytic 1µF/50 V	CE04W1H010M
C993	253 1180 921	Ceramic 1000pF/50 V	CK45B1H102K
C994	254 4260 948	Electrolytic 1µF/50 V	CE04W1H010M
C995	253 1024 003	Ceramic 0.01µF/50 V	CK45F1H103Z
C995	253 1180 921	Ceramic 1000pF/50 V	CK45B1H102K
C996	253 1024 003	Ceramic 0.01µF/50 V	CK45F1H103Z
C997	253 1024 003	Ceramic 0.01µF/50 V	CK45F1H103Z
C998	253 1180 921	Ceramic 1000pF/50 V	CK45B1H102K

				Q'ty
TC01	213 0041 063	Trimmer Capacitor		1
TC02	213 0034 009	Trimmer Capacitor	CTZ-51C	1

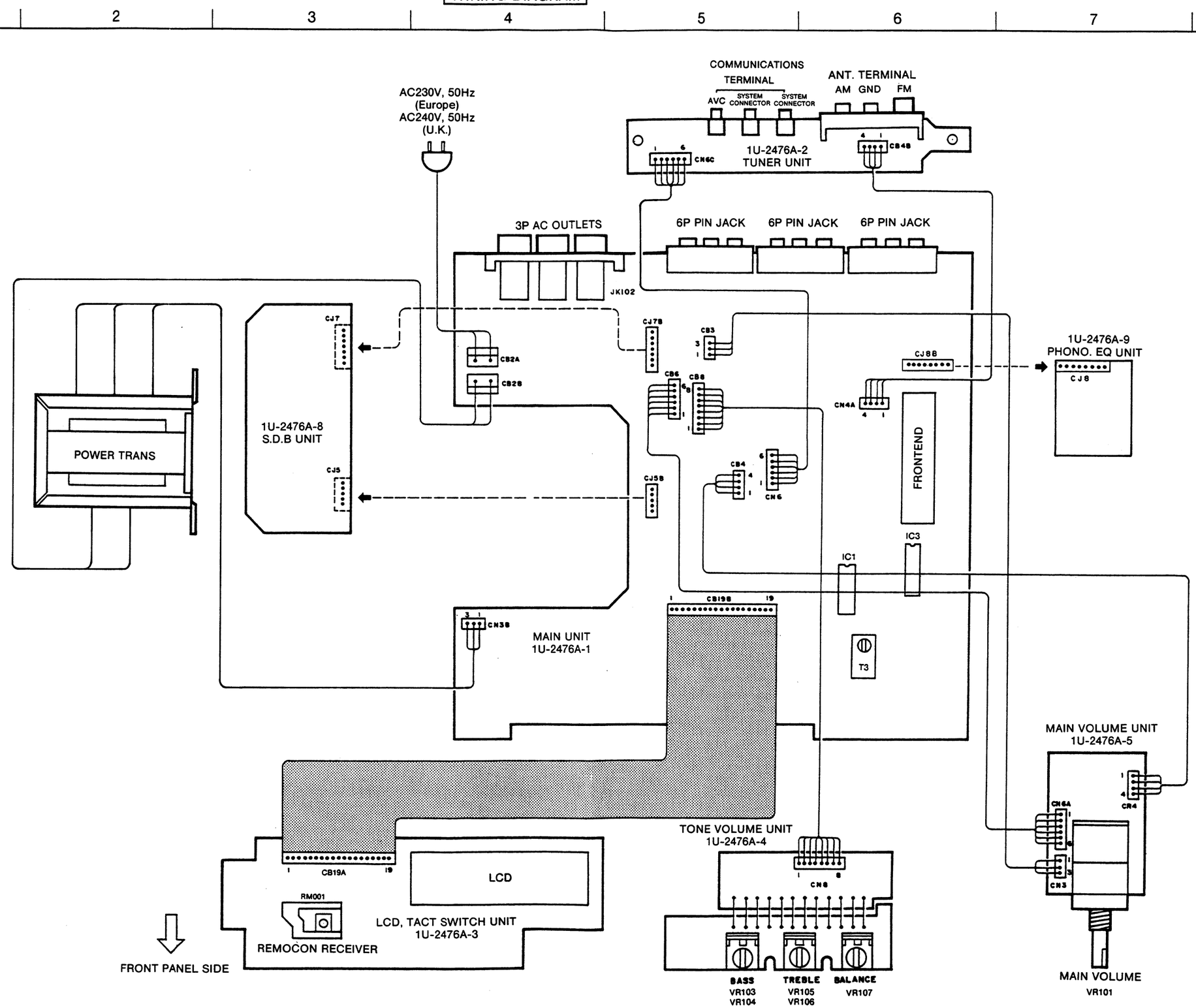
OTHERS GROUP

		(P.W.Board)		1
L011	235 0020 990	Inductor 393J		1
L012	235 0020 990	Inductor 393J		1
L101	235 9003 002	FTZ Choke Coil		1
L102	235 9003 002	FTZ Choke Coil		1
S001～005	212 5604 910	Tact Switch		5
S006～014	212 5606 905	Tact Switch		9
	202 0040 909	Fuse Clip		4
	417 0307 066	Heat Sink		1
	473 8007 009	Cup Screw 3X12		2
	204 8278 009	6 P Pin Jack(S-GND)		3
△F102	206 1015 003	Fuse 0.5 A		1
△F101	206 1015 058	Fuse 1.6 A(T)		1
△J106	203 3950 002	3 P AC Outlet		1
JK301	204 8422 004	Mini Jack(sw)	For AVC	1
JK302	204 8421 005	Mini Jack	For System	1
JK303	204 8421 005	Mini Jack	For System	1
△RL101	214 0120 013	Relay(TV-8)		1
X001	399 0075 003	Crystal Vibrator(7.2 MHz)		1
X002	399 9018 003	Ceramic Vibrator CST4.00 MGW		1
	205 0603 002	3 P Ant. Terminal(DIN)		1
CF001	261 0004 007	Ceramic Filter	SFT10.7MS2	2
CF002				
CF004	261 0031 001	Ceramic Filter	BFU450C4	1
CF005	261 0079 005	Ceramic Filter	CSB456F11	1
T001	231 2905 008	FM IF DET(A)		1
T002	231 2906 007	FM IF DET(B)		1
T003	231 1132 005	AM IFT(SFL450J3)		1
T011	231 1133 004	LW Ant. Trans		1
T012	231 0923 008	MW Ant. Trans		1
T013	231 1135 002	LW Osc Coil		1
T014	231 1130 007	MW Osc Coil		1

Ref. No.	Part No.	Part Name	Remarks	Q'ty
	216 0079 005	FM Front End(U)		1
	232 0152 005	Anti. Birdie Filter		1
CB003	205 0343 032	3 P Conn. Base(KR-PH)		1
CB004C	205 0343 045	4 P Conn. Base(KR-PH)		2
CB006	205 0343 061	6 P Conn. Base(KR-PH)		1
CB008	205 0343 087	8 P Conn. Base(KR-PH)		1
CJ005	205 0536 072	5 P Conn. Socket		1
CJ5B	205 0535 073	5 P Conn. Base		1
CJ007	205 0536 085	7 P Conn. Socket		1
CJ7B	205 0535 086	7 P Conn. Base		1
CJ8B	205 0535 002	8 P Conn. Base		1
CJ8	205 0536 001	8 P Conn. Socket		1
CB19B	205 0736 018	19 P FFC Conn. Base		1
CB019A	205 0491 078	19 P FFC Conn. Base		1
CB2A	205 0624 007	:2 P AC Conn. Base		1
CB2B	205 0581 001	2 P VH Conn. Base		1
CB3B	205 0277 030	3 P EH Conn. Base(RD)		1
CN3	203 4640 010	3 P PH-SAN Shield Cord		1
CN6A	204 0383 002	6 P PH-SAN Conn. Cord		1
CN4	203 6233 014	4 P SAN-PH Cord		1
CN8	204 2512 020	8 P KR-DA Conn. Cord		1
CN6C	204 0316 011	6 P DA-DA Conn. Cord		1
W101	001 9007 133	V.Wire(UL1430.AWG22)	Black L=110	1
W102	001 9007 146	V.Wire(UL1430.AWG22)	Black L=90	1
W103	209 0151 035	2 C Ribon Cable		1
W104	209 0162 011	Shield Wire Assy		1
W201	203 0338 025	Connecting Cord Assy	Brown L=100	1
	001 0077 049	Vinyl Wire	Gray L=80	1
CN4A,B	205 0185 041	4 P Wire Holder		2
	415 9036 031	Glass Tube D=2.0 L=5	for R266	1
	125 9002 007	UL Tube(L=10)		4
	461 0415 007	Rubber Sheet		3
	513 0815 005	Fuse Label(0.5 A)		1
	513 0815 089	Fuse Label(T1.6 A)		1

TUNER PRE SECTION

WIRING DIAGRAM



1 | 2 | 3 | 4 | 5 | 6

IU-2476A-9 PHONO,EQ UNIT

IU-2476A-8 S.D.B. UNIT

IU-2476A-5 MAIN VLUME UNIT

IU-2476A-2 TUNER UNIT

IC101 NJM2082DD

IC102 LC7821

IC103 RC4558P

IC104 NJM2068DD

IC105 RC4558p

IC106 LB1639

IC107 TC4966

IC108 NJM2068DD

IC 1 LA

IC 2 LA3410

IC 3 LM7000

IC 4 FM-FRONTEND

PHONO

CD

TAPE

DAT

TAPE REC

DTA REC

PROCESSOR LOOP OUT

PROCESSOR LOOP IN

PRE OUT

FM 75ohm

GND

AM

SYSTEM CONNECTOR1

SYSTEM CONNECTOR2

AVC

VOL PASS

SDB

F-MUTE

VOL UP

VOL DOWN

DATA

CE

CLK

TUR

TU

TX

RX

AV2

AV1

STRQ

CE2

CLK2

DATA2

STOP

FM

AM

LW

SIGNAL

T1 LW-ANT. TRANS

T11 MW-ANT.TRANS

T13 LW-OSC COIL

T14 MW OSC COIL

T3 AMIF

LPF2 ANT.B.F

CF1

CF2

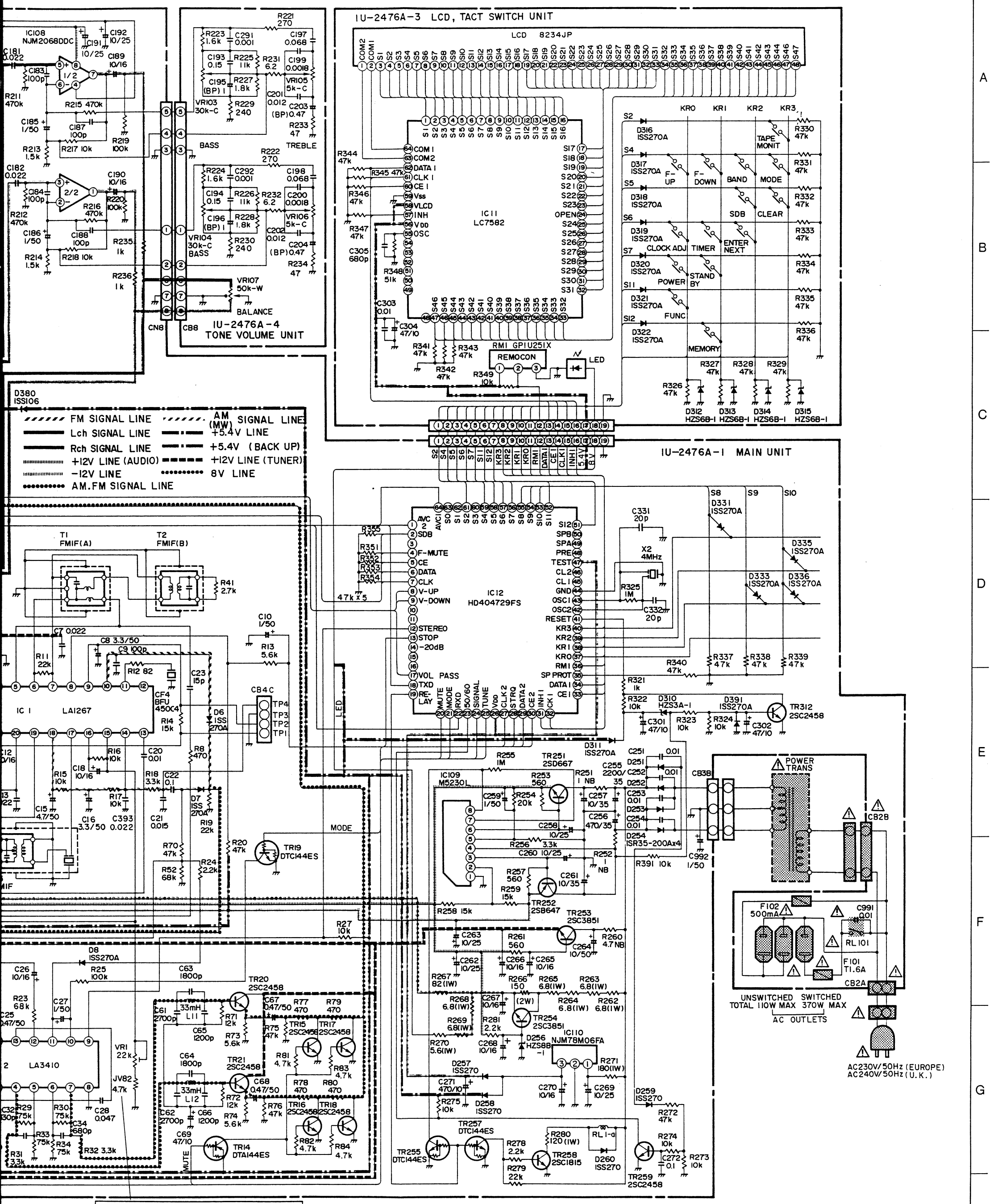
CF5 CSB456F 11

X1 7.2MHz

WARNING:
Parts marked with this symbol ⚠ ▨ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTIO
Before
leakage
defectiv

WARNI
DO NO



CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 milliamps, or if the resistance from chassis to either side of the power cord is less than 240 Kohms, the unit is defective.

WARNING
DO NOT return the unit to the customer until the problem is located and corrected.

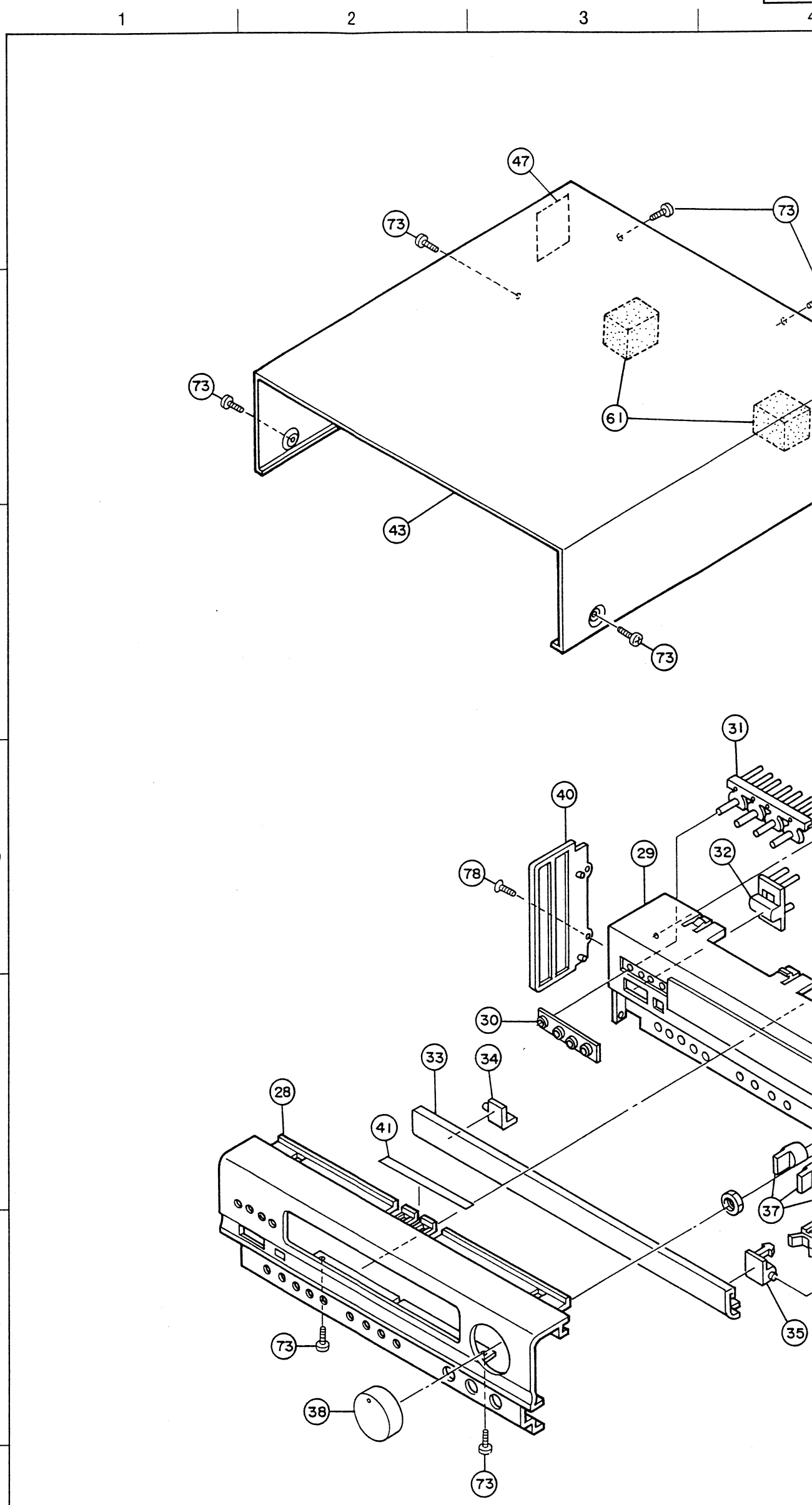
NOTES
ALL RESISTANCE VALUES IN OHM K=1,000 OHM M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

TUNER PRE SECTION

EXPL

EXPLODED VIEW OF PARTS LIST

Ref. No.	Part No.	Part Name	Remarks	Q'ty
◉ 1	1U- 2476 A	P.W.Board Unit Assy		1S
1-1	—	Main Unit		(1)
1-2	—	Tuner Unit		(1)
1-3	—	LCD,Tact Switch Unit		(1)
1-4	—	Tone Volume Unit		(1)
1-5	—	Main Volume Unit		(1)
1-6	—	Trans Wire Unit(P)		(1)
1-7	—	Trans Wire Unit(S)		(1)
1-8	—	S.D.B. Unit		(1)
1-9	—	Phono,EQ Unit		(1)
2	204 8278 009	6 P Pin Jack(S-GND)		3
3	211 0749 107	Variable Resistor 100k ohm		1
4	211 0769 006	Variable Resistor 30k ohm	Bass	1
5	211 0768 007	Variable Resistor 5k ohm	Treble	1
6	211 9105 001	Variable Resistor 50k ohm		1
⚠ 7	206 1015 058	Fuse 1.6 A(T)		1
⚠ 8	203 3950 002	3 P AC Outlet		1
9	—	—		
10	204 8421 005	Mini Jack	for system	2
11	204 8422 004	Mini Jack(SW)	for AVC	1
⚠ 12	214 0120 013	Relay(TV-8)		1
13	254 4258 785	Chemicon 470μF/25 V	C256	1
14	254 4259 700	Chemicon 2200μF/35 V	C255	1
15	393 4142 002	LCD (8234JP)		1
16	449 0057 009	LCD Holder		1
17	205 0603 002	3 P Ant. Terminal(DIN)		1
18	216 0079 005	Front End(U)		1
◉ 19	411 1184 332	Main Chassis		1
◉ 20	412 9339 001	Trans Bracket		1
21	104 0237 201	Foot Assy		4
22	105 1042 249	Rear Panel	Europe model	1
22	105 1042 252	Rear Panel	U.K. model	1
⚠ 23	206 2091 000	AC Cord W/Conn.	Europe model	1
⚠ 23	206 2109 002	AC Cord W/Conn.	U.K. model	1
⚠ 24	445 0056 008	Cord Bushing		1
25	205 0752 005	Short Pin		2
26	412 2814 028	Card Spacer(L=10)		4
27	—	—		
28	144 2211 236	Front Panel		1
29	146 1409 317	Inner Panel Assy		1
30	146 1420 121	Knob Guide(Round)		1
31	113 1549 044	Push Knob(Round)		1
32	113 1460 013	Power Knob		1
33	144 2216 215	Trap Door		1
34	401 0175 112	Door Hinge(L)		1
35	401 0176 111	Door Hinge(R)		1
36	435 0113 009	Latch(Y3Y18)		1
37	112 0645 166	Knob		3
38	112 0691 107	Volume Knob Assy		1
⚠ 39	233 6001 001	Power Trans	Europe model	1
⚠ 39	233 9650 006	Power Trans	U.K. model	1
40	146 1411 211	Side Plate		2
41	122 0183 007	Spacer	100X10XT5	1
★ 42	445 8004 007	Wire Clamper		3
43	102 0519 211	Top Cover		1
44	414 0676 015	Shield Plate		1
45	009 0077 001	19 P F.F.Cable		1
◉ 46	412 3485 016	P.W.Bracket		2
47	513 9316 013	Rating Sheet	Europe model	1
47	513 9316 039	Rating Sheet	U.K. model	1
48	415 9066 001	Insulating Sheet		1
49	477 0018 001	Washer(P-87)		1
50	205 0071 016	Terminal Assy		1
51	461 0756 012	Rubber Sheet	10X10XT15	1
52	414 9132 000	Shield Plate		1
53	461 0496 026	Spacer	10X35XT3	1
54	461 0756 041	Rubber Sheet	10X10XT7	1
55	461 0756 025	Rubber Sheet	10X10XT10	1
56	513 2058 006	Blind Sheet		4
57	461 9039 002	Spacer		1
◉ 58	412 9340 003	Fix. Plate		1
59	414 9133 009	Earth Plate		1
60	461 0758 010	Rubber Sheet		1
61	461 0756 009	Rubber Sheet	25X25XT20	2
★ 62	513 9328 001	Homologation Label		1
⚠ 63	206 1015 003	Fuse 500 mA		1
64	513 0815 089	Fuse Label(T-1.6 A)		1
65	513 0815 005	Fuse Label(0.5 A)		1
66	—	—		
67	—	—		
68	—	—		
	—	—	20X20XT5	2
SCREWS				
71	473 7004 016	Tapping Screw(S)4X6		4
72	473 7002 018	Tapping Screw(S)3X8		10
73	473 7015 005	Tapping Screw(S)3X6	Black	13
74	473 7505 007	Tapping Screw(P)2.6X8		12
75	477 0064 107	Fixing Screw		8
76	477 0276 018	Earth Screw		1
77	473 7004 003	Tapping Screw(S)4X8		4
78	473 7500 028	F.Tapping Screw(P)3X8		2
79	473 7002 005	Tapping Screw(S)3X6		1
80				
PACKING & ACCESSORIES (Not included EXPLODED VIEW)				
101	505 0178 000	:Poly Cover		1
102	503 1062 106	:Cushion		1
103	503 1061 000	:Top Cushion	Europe model	1
103	503 9040 001	:Top Cushion	U.K. model	1
104	501 1657 010	:Carton Case	Europe model	1
104	501 1657 023	:Carton Case	U.K. model	1
105	505 0241 005	Cabinet Cover		1
106	511 2421 006	:Inst. Manual		1
107	511 2433 007	:Inst. Manual		1
108	505 9124 000	:Poly Cover	U.K. model only	1



NOTE ON PARTS LIST

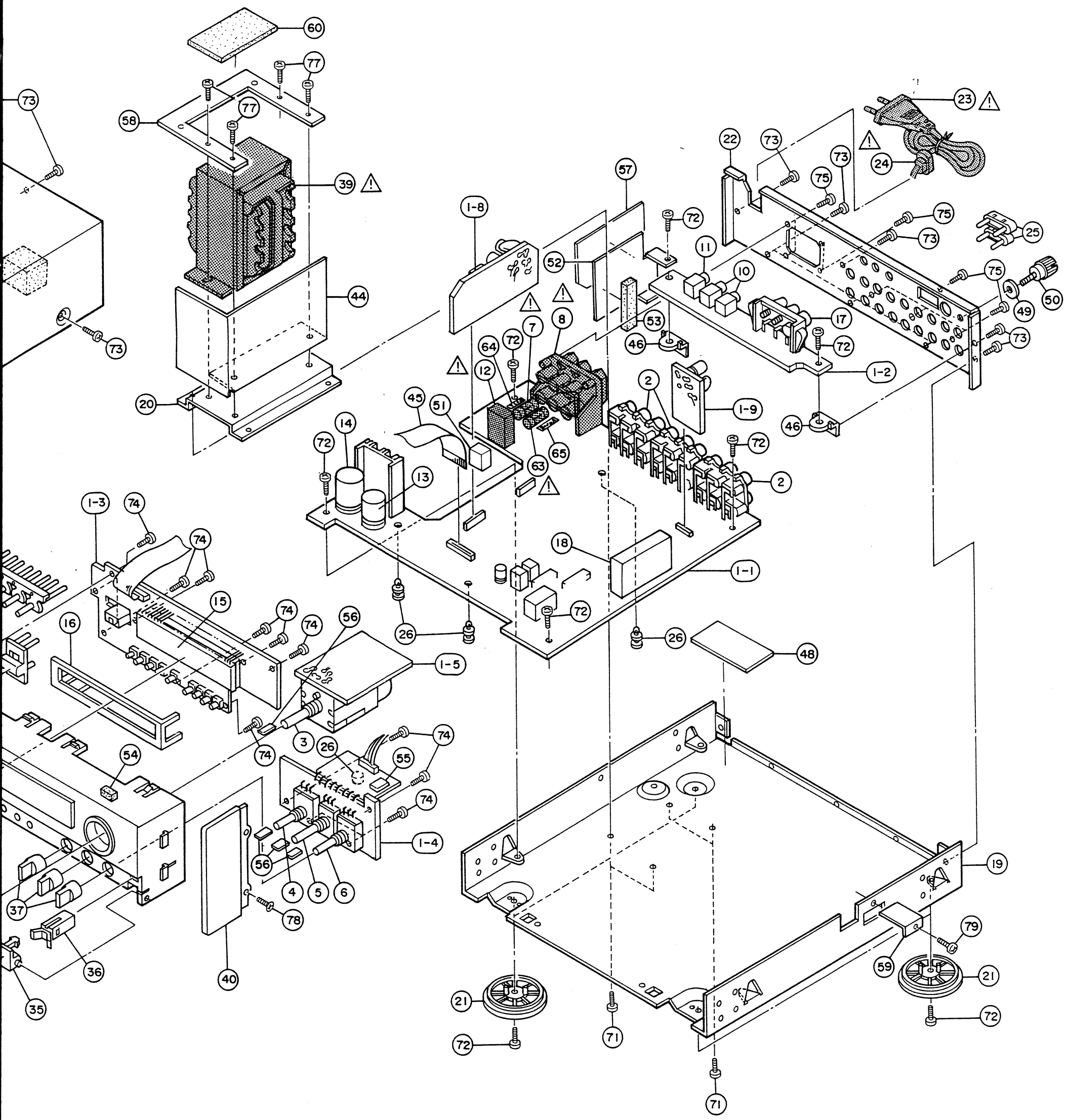
- Part indicated with the mark "◉" are not always in stock and possibly to take a long period of time for suppling, or in so supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.

WARNING:

Parts marked with this symbol ⚠ ▒▒ have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

EXPLODED VIEW

4 | 5 | 6 | 7 | 8 | 9

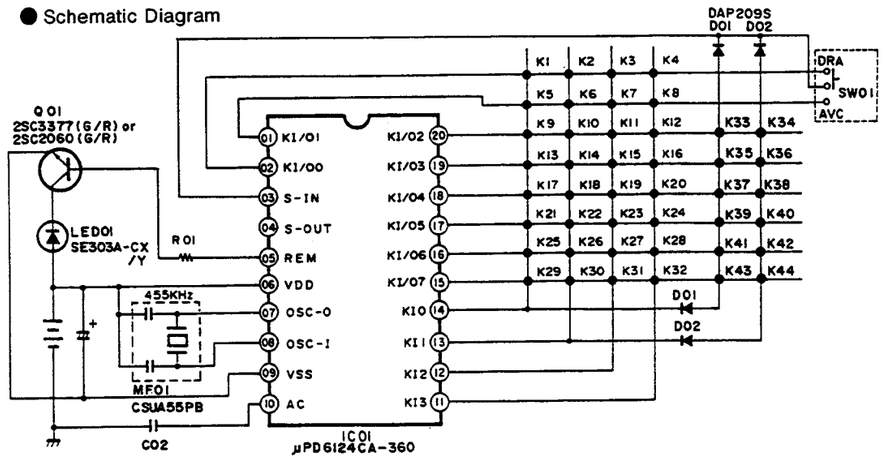


g, or in some case

REMOTE CONTROL UNIT (RC-154: Part No.: 3990168004)

1 2 3 4 5 6 7 8

● Schematic Diagram



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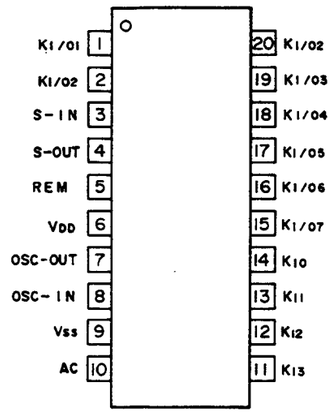
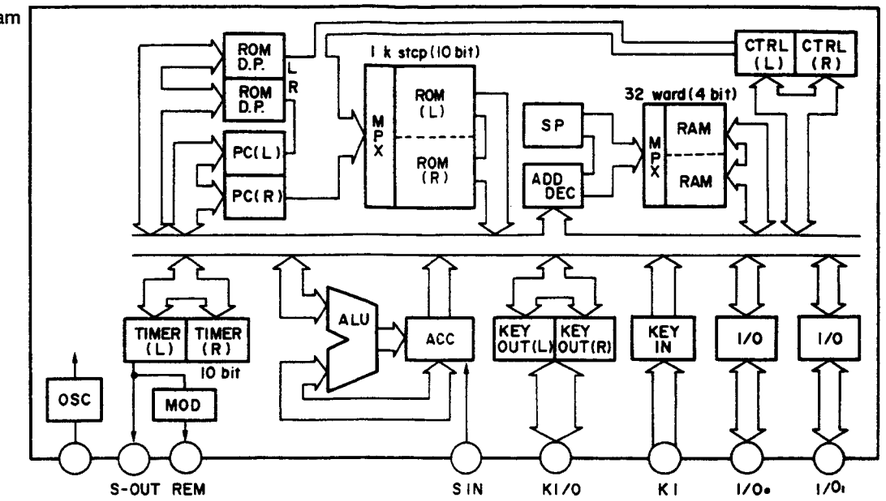
● IC

μPD6124CA-360
Pin Connection (Top View)

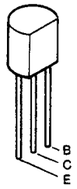


Block Diagram



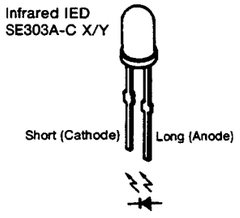
● Transistor

2SC2060 (G/R)
2SC3377 (G/R)

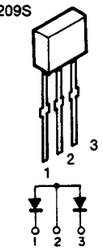


● Diodes

Infrared IED
SE303A-C X/Y



DAP209S



Cord Table (SW DRA Mode Side)

Key No.	System Address C1	C2	C3	C4	C5	Data Code C6	C7	C8	C9	C10	C11	Expansion C12	C13	Mask C14	Ruling K	Remarks	RC-154
1	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	POWER	○
2	0	0	1	1	0	1	0	1	1	0	0	1	0	0	0	VOLUME UP	○
3	0	0	1	1	0	0	0	1	1	0	0	1	0	0	0	VOLUME DOWN	○
4	0	0	1	1	0	0	1	0	0	1	1	1	0	0	0	SLEEP	○
5	0	0	1	1	0	1	1	0	1	0	0	1	0	0	0	MUTING	
6	0	0	1	1	0	1	1	1	1	1	0	1	0	0	0	FUNCTION	○
7	0	0	1	1	0	0	0	1	1	1	0	1	0	0	0	T-MONITOR	○
8	0	0	1	1	0	1	0	0	1	1	0	1	0	0	0	TUNER	○
9	0	0	1	0	0	0	0	1	1	1	0	1	0	0	0	F.PLAY 1 ▶	○
10	0	0	1	0	0	1	1	1	0	1	0	1	0	0	0	R.PLAY 1 ◀	○
11	0	0	1	0	0	0	1	0	1	1	0	1	0	0	0	FF 1 ▶▶	○
12	0	0	1	0	0	1	1	0	1	1	0	1	0	0	0	REW 1	○
13	0	0	1	0	0	1	1	1	1	1	0	1	0	0	0	REC/MUTE 1 ●	○
14	0	0	1	0	0	0	1	1	1	1	0	1	0	0	0	STOP 1 ■	○
15	0	0	1	0	0	1	1	0	0	1	0	1	0	0	0	SELECT A/B	○
16																No signals sent	
17 ~ 27	Keys for which the codes change See the Code Tables for the tuner and CD modes.																
28																	
29 ~ 32																No signals sent	
33	0	0	0	1	0	1	1	1	0	1	0	1	0	0	0	DIRECT	○
34	0	0	0	1	0	1	0	1	1	0	0	1	0	0	0	PROGRAM	○
35	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	CANCEL	○
36	0	0	0	1	0	0	1	0	1	0	1	1	1	0	0	SDB	○
37	0	0	0	1	0	0	0	1	1	1	0	1	0	0	0	PLAY ▶	○
38	0	0	0	1	0	0	1	1	1	1	0	1	0	0	0	STOP ■	○
39	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	A-SEARCH ▶▶|	○
40	0	0	0	1	0	1	0	0	1	1	0	1	0	0	0	A-SEARCH |◀◀	○
41	0	0	0	1	0	0	1	0	1	1	0	1	0	0	0	M-SEARCH ▶▶	○
42	0	0	0	1	0	1	1	0	1	1	0	1	0	0	0	M-SEARCH ◀◀	○
43	0	0	0	1	0	1	0	1	1	1	0	1	0	0	0	PAUSE ⏸	○
44	0	0	0	1	0	1	1	0	1	0	1	1	0	0	0	DISK SKIP	○

Cord Table (SW DRA Mode Side)
Tuner mode (after TUNER (K8) Key pressed (and in the initial state with the SW DRA mode values after the batteries have been inserted))

Key No.	System Address C1	C2	C3	C4	C5	Data Code C6	C7	C8	C9	C10	C11	Expansion C12	C13	Mask C14	Ruling K	Remarks	RC-154
17	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	1	○
18	0	0	1	1	0	1	1	0	0	0	0	1	0	0	0	2	○
19	0	0	1	1	0	0	0	1	0	0	0	1	0	0	0	3	○
20	0	0	1	1	0	1	0	1	0	0	0	1	0	0	0	4	○
21	0	0	1	1	0	0	1	1	0	0	0	1	0	0	0	5	○
22	0	0	1	1	0	1	1	1	0	0	0	1	0	0	0	6	○
23	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	7	○
24	0	0	1	1	0	1	0	0	1	0	0	1	0	0	0	8	○
25	0	0	1	1	0	1	1	0	0	0	1	1	0	0	0	9	○
26	0	0	1	1	0	0	0	1	0	0	1	1	0	0	0	10	○
27	0	0	1	1	0	1	1	1	1	0	1	1	0	0	0	+10	○

Cord Table (SW DRA Mode Side)
CD mode (after DIRECT (K33) or PROGRAM (K34) Key presssed)

Key No.	System Address C1	C2	C3	C4	C5	Data Code C6	C7	C8	C9	C10	C11	Expansion C12	C13	Mask C14	Ruling K	Remarks	RC-154
17	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1	○
18	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0	2	○
19	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	3	○
20	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	4	○
21	0	0	0	1	0	0	1	1	0	0	0	1	0	0	0	5	○
22	0	0	0	1	0	1	1	1	0	0	0	1	0	0	0	6	○
23	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	7	○
24	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	8	○
25	0	0	0	1	0	0	1	0	1	0	0	1	0	0	0	9	○
26	0	0	0	1	0	1	1	0	1	0	0	1	0	0	0	10	○
27	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	+10	○

Cord Table (SW AVC Mode Side)

Key No.	System Address C1	C2	C3	C4	C5	Data Code C6	C7	C8	C9	C10	C11	Expansion C12	C13	Mask C14	Ruling K	Remarks	RC-154
1	0	1	0	0	0	1	0	0	0	0	0	1	1	0	0	POWER	○
2	0	1	0	0	0	1	0	0	0	1	1	1	1	0	0	VOLUME UP	○
3	0	1	0	0	0	0	1	0	0	1	1	1	1	0	0	VOLUME DOWN	○
4	0	0	1	1	0	0	1	0	0	1	1	1	0	0	0	SLEEP	○
5	0	1	0	0	0	0	0	0	0	1	1	1	1	0	0	MUTING	
6	0	0	1	1	0	1	1	1	1	1	0	1	0	0	0	FUNCTION	○
7	0	0	1	1	0	0	0	1	1	1	0	1	0	0	0	T-MONITOR	○
8	0	0	1	1	0	1	0	0	1	1	0	1	0	0	0	TUNER	○
9	0	0	1	0	0	0	0	1	1	1	0	1	0	0	0	F.PLAY 1 ▶	○
10	0	0	1	0	0	1	1	1	0	1	0	1	0	0	0	R.PLAY 1 ◀	○
11	0	0	1	0	0	0	1	0	1	1	0	1	0	0	0	FF 1 ▶▶	○
12	0	0	1	0	0	1	1	0	1	1	0	1	0	0	0	REW 1 ◀◀	○
13	0	0	1	0	0	1	1	1	1	1	0	1	0	0	0	REC/MUTE 1 ●	○
14	0	0	1	0	0	0	1	1	1	1	0	1	0	0	0	STOP 1 ■	○
15	0	0	1	0	0	1	1	0	0	1	0	1	0	0	0	SELECT A/B	○
16																No signals sent	
17	0	1	0	0	0	0	1	0	1	0	0	1	1	0	0	VDP-1	○
18	0	1	0	0	0	1	1	0	1	0	0	1	1	0	0	VDP-2	○
19	0	1	0	0	0	1	0	1	1	0	0	1	1	0	0	VCR-1	○
20	0	1	0	0	0	0	1	1	1	0	0	1	1	0	0	VCR-2	○
21	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	DBS	○
22	0	1	0	0	0	1	0	0	1	0	0	1	1	0	0	TV	○
23	0	1	0	0	0	1	1	1	0	0	1	1	1	0	0	BYPASS	○
24	0	1	0	0	0	0	1	1	0	0	1	1	1	0	0	SURROUND MODE	○
25	0	1	0	0	0	0	0	1	0	0	1	1	1	0	0	D CENTER	○
26	0	1	0	0	0	0	1	0	1	0	1	1	1	0	0	T. TONE	○
27	0	1	0	0	0	1	1	0	1	0	1	1	1	0	0	3CH LOGIC	○
28	0	1	0	0	0	1	1	0	0	1	1	1	1	0	0	REAR VOL. UP	○
29	0	1	0	0	0	0	0	1	0	1	1	1	1	0	0	REAR VOL. DOWN	○
30	0	1	0	0	0	1	0	1	0	1	1	1	1	0	0	CENTER VOL. UP	○
31	0	1	0	0	0	0	1	1	0	1	1	1	1	0	0	CENTER VOL. DOWN	○
32																No signals sent	
33	0	0	0	1	0	1	1	1	0	1	0	1	0	0	0	DIRECT	○
34	0	0	0	1	0	1	0	1	1	0	0	1	0	0	0	PROGRAM	○
35	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	CANSEL	○
36	0	0	0	1	0	0	1	0	1	0	1	1	1	0	0	SDB	○
37	0	0	0	1	0	0	0	1	1	1	0	1	0	0	0	PLAY ▶	○
38	0	0	0	1	0	0	1	1	1	1	0	1	0	0	0	STOP ■	○
39	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	A-SEARCH ▶▶|	○
40	0	0	0	1	0	1	0	0	1	1	0	1	0	0	0	A-SEARCH |◀◀	○
41	0	0	0	1	0	0	1	0	1	1	0	1	0	0	0	M-SEARCH ▶▶	○
42	0	0	0	1	0	1	1	0	1	1	0	1	0	0	0	M-SEARCH ◀◀	○
43	0	0	0	1	0	1	0	1	1	1	0	1	0	0	0	PAUSE ⏸	○
44	0	0	0	1	0	1	1	0	1	0	1	1	0	0	0	DISK SKIP	

A B C D E